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PROTEIN COMES INTO ITS OWN

The Frank Billings Lecture

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The science of nutrition as I have watched it develop through the years has presented a constantly changing picture. According to the trend of research and the appeal to the imagination made by the discoveries of the day, first one coloration and then another has dominated the picture. This development can roughly be divided into five periods, all culminating today in a period of greater appreciation of protein.

THE ENERGY ERA

First, there was the energy era, the day of the great pioneer students of metabolism, of Liebig and Voit, and then of Rubner and Atwater, Friedrich Müller and Graham Lusk. The brilliant discoveries of that period had their beginnings in Paris with Lavoisier in the investigations which led him to the conclusion that all life is a chemical process. The scientists who followed Lavoisier, notably those of the Munich school, were primarily interested in the chemical changes that take place in the body under the influence of living cells. Almost all of what we regard today as fundamental in metabolism was brought to light by these men. It was this generation of workers who discovered that the law of the conservation of energy is applicable to nutrition, that the nitrogen of the urine can be taken as a measure of protein destruction, that nitrogen equilibrium can be maintained by an appropriate diet, that muscle work does not appreciably increase protein metabolism, that foodstuffs may under given conditions replace each other in accordance with their caloric value (the isodynamic law) and that the heat value of basal metabolism is proportional to surface area. The standard caloric values of carbohydrate, protein and fat as determined at that time by Rubner and subsequently modified by Atwater are used today in all nutritional reckonings. Animal calorimetry had its beginning at that time; methods for measuring respiratory metabolism were perfected, and the Atwater-Rosa-Benedict calorimeter, which has served as the model for many subsequent forms of apparatus, was developed. The intricacies of metabolic disorders were studied and such diseases as gout and diabetes obtained a better understanding. During this era prime consideration was given to energy exchange, and attention to calories came first. In a later period, calories came perilously near being forgotten.

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THE PERIOD OF ADEQUACY IN DIET

A little later came an era that may appropriately be called the period of adequacy in diet. Elvehjem recently remarked on the contrast between the liberal space given the regulation of the diet in the "corpus" of Hippocrates and the neglect of this subject in favor of drug therapy in the succeeding centuries. This neglect has continued almost to our time. Notwithstanding the wealth of information concerning the harmful effects of starvation uncovered by the investigators of the nineteenth century, physicians of the early years of this century continued to give little thought to the nutritive requirements of the sick person. They told the patient what he must not eat, not what he must eat. Patients with typhoid, for example, were given each day only a few ounces of milk and a little thin broth, and some physicians did not believe in giving milk! The plight of these patients, as I can testify, was grievous in the extreme. The distastrous effects of such a diet were not appreciated until the first decade of this century, when the error of dietary neglect became apparent notably in respect to two diseases, typhoid and peptic ulcer. I recall hearing Friedrich Müller in 1908 tell his students of the enormous tissue waste produced by the infection and resulting fever in typhoid and state that much of this waste could be prevented if the patient was given more food. Simultaneously in this country, Shaffer and Coleman [1] reported their studies of metabolism in this disease and advised a more liberal diet. A few months later, Coleman [2] again proposed a radical change in the feeding of the typhoid patient. The prevailing fear that an increase in the amount of food would both injure the intestinal ulcers and bring the fever to a higher level continued among many physicians, however, until it was effectively disposed of a few years later by the studies of Coleman and DuBois.[3] Thereafter, a much more liberal diet was generally used in the treatment of all febrile illnesses. In typhoid the results were especially gratifying. The so-called typhoid toxemia was eliminated, the frequency of complications lessened, the period of illness shortened, much of the resulting disability relieved and the mortality greatly reduced. The difference was graphic. It marked a new epoch in the dietary treatment of disease.

A similar improvement, though not so striking, was accomplished early in this era when Lenhartz [4] discarded the old von Leube starvation diet, then used in the treatment of patients with peptic ulcer, and gave

1. Shaffer, P. A., and Coleman, W.: Protein Metabolism in Typhoid Fever, Arch. Int. Med. **4**: 538 (Dec.) 1909.
2. Coleman, W.: Diet in Typhoid Fever, J. A. M. A. **53**: 1145 (Oct. 9) 1909.
3. Coleman, W., and DuBois, E. F.: Clinical Calorimetry: VII. Calorimetric Observations on the Metabolism of Typhoid Patients With and Without Food, Arch. Int. Med. **15**: 887 (May) 1915.
4. Lenhartz, cited by Rutimeyer, L.: Magenblutungen, in Kraus, F., and Brugsch, T.: Spezielle Pathologie und Therapie, Berlin, Urban & Schwarzenberg, 1914, vol. 5, p. 1168.

these patients more food and when, shortly thereafter, Sippy [5] in this country devised his well known regimen. True, the Sippy diet still did not provide enough food as we see it today, but it provided a great deal more than the patient had been given previously and its adoption recorded a distinct advance in the treatment of peptic ulcer. From such lessons physicians learned that hardly anything can be cured by starvation. They have come to provide a more liberal diet in the treatment of many diseases, and, as a result, they often see a shorter illness and less debility.

THE ERA OF ECONOMY IN NUTRITION

The third era brought protein into disrepute, and it is just now recovering its good name. This was the era of economy in nutrition. It was the day of "intestinal autointoxication" when many physicians were prone to ascribe almost every ill to which human flesh is heir to protein decomposition products absorbed from the intestinal tract. This idea led the physiologist Chittenden [6] to study on himself the influence of a low protein diet. Subsisting on a diet that provided only about 40 Gm. of protein daily, less than half of the then accepted standard, Chittenden maintained better health than he had enjoyed before. The sick headaches, bilious attacks and rheumatic pains all disappeared, and he experienced a greater degree of vigor. He was greatly encouraged. He continued his studies on others, professional colleagues, student athletes and soldiers, and all his subjects fared well during their period of protein restriction, which was about nine months. A little later the Danish physiologist Hindhede [7] also became an ardent advocate of the low protein diet and, like Chittenden, cited personal experiences. He reported that he even felt weak after eating much meat. Benedict [8] was at first critical, but later, during the food shortages of the first World War, he conducted experiments on a group of students which led him to revise his former views; he concluded that economy in nutrition promotes physical well-being. Although these beliefs in the beneficial effects of parsimony in nutrition were not accepted by scientists generally, many adherents were found in the medical profession and in the general public.

Apparently, there were two faults in these human experiments which tended to make the conclusions fallacious. First, no control groups were used. To those who are familiar with the reports of attempts made during the recent World War to improve the vigor of workers in industry by giving them vitamin pills, it is evident that, if conclusions are to be drawn from the testimony of the subjects themselves, control groups are necessary. Second, the time element was entirely too short. Lusk saw the difficulty clearly when he wrote that, while these experiments proved that the allowance of protein may safely be reduced during many months to half or less of what habit or appetite suggests without impairment of health or strength, it remains to be seen whether this quantity of protein in the ration, which is not greater than the body would metabolize in starvation, is advisable as a program for the whole of one's adult life.

Animal experiments appeared to provide the answer, as may be seen from the studies of McCollum and Simmonds,[9] who called attention to the relatively short period, nine months, of the reported human experiments, which is approximately 1 per cent of man's span of life. They cited experiments on animals indicating that substandard diets will, as a rule, produce no evidence of deterioration in the physical condition of the subject until 5 per cent of normal life expectancy has been covered; after that the ill effects of the restricted diet become apparent. McCollum and Simmonds observed that diets which are just good enough to permit a young animal to develop in an apparently normal manner will, when adhered to sufficiently long, cause instability of the nervous system and early aging. It was stated further that any deviation from the quality of the protein moiety of the diet, even in slight degrees from the optimum, exerts a profound influence on the functioning of the nervous system and the life history of the animal. What would have been the life history of Chittenden's subjects if the low protein diet had been observed ten years rather than nine months?

Physicians were often influenced during this low protein era by the reports of experiments on animals that were interpreted to indicate that a high protein diet was damaging to the kidneys and arteries. It is pertinent to state first that much of the evidence cited cannot be ascribed solely to the protein quota of the diet because the rations used were defective in other respects. Second, there was little evidence of true nephritis, and the animals brought to maturity on these diets remained apparently healthy and robust, showed normal fertility and produced long-lived healthy young, thus measuring up to the best nutritive criteria. Third, the intake of protein in such experiments was in most instances enormous, much greater relatively than civilized man ever takes. The results of these experiments apparently are not applicable to man.

There is, however, no lack of evidence from observations on man, as may be seen from the testimony of Stefánsson.[10] In his life in the Arctic he became enthusiastic over the virtues of an exclusive meat diet. His physician Lieb,[11] after a careful study of the explorer, wrote that during Stefánsson's eleven and one-half years in the Arctic Circle for long periods he subsisted solely on meat and that while on this diet he experienced the highest degree of physical and mental well-being. Of like tenor is the testimony of Thomas,[12] who as a member of the McMillan Arctic Expedition of 1926 made a cardiovascular and renal survey of the Eskimos of northern Labrador and Greenland. He reported that these people, living on an exclusively carnivorous diet, showed no unusual prevalence of vascular and renal disease. Similar observations were made by Tolstoi [13] and by McClellan and

5. Sippy, B. W.: Gastric and Duodenal Ulcer: Medical Cure by an Efficient Removal of Gastric Juice Corrosion, J. A. M. A. **64**: 1625 (May 15) 1915.

6. Chittenden, R. H.: Physiological Economy in Nutrition, with Special Reference to the Mineral Requirement of the Healthy Man: An Experimental Study, New York, F. A. Stokes Co., 1904; The Nutrition of Man, ibid., 1907.

7. Hindhede, M.: Untersuchungen über den Einfluss einiger Nahrungsmittel auf die Löslichkeit der Harnsäure, Skandinav. Arch. f. Physiol. **27**: 87, 1912.

8. Benedict, F. G.: The Nutritive Requirements of the Body, Am. J. Physiol. **16**: 409, 1906; Physiological Effects of Prolonged Protein Reduction in the Diet of Twenty-Five Men, Tr. Am. Philos. Soc. **57**: 479, 1918.

9. McCollum, E. V., and Simmonds, N.: The Newer Knowledge of Nutrition: The Use of Food for the Preservation of Vitality and Health, ed. 3, New York, The Macmillan Company, 1925, vol. 5.

10. Stefánsson, V.: Observations on Three Cases of Scurvy, J. A. M. A. **71**: 1715 (Nov. 23) 1918.

11. Lieb, C. W.: Effects of An Exclusive, Long-Continued Meat Diet Based on the History, Experiences and Clinical Survey of Vilhjalmur Stefánsson, Artic Explorer, J. A. M. A. **87**: 25 (July 3) 1926.

12. Thomas, W. A.: Health of a Carnivorous Race: A Study of the Eskimo, J. A. M. A. **88**: 1559 (May 14) 1927.

13. Tolstoi, E.: Effect of Exclusive Meat Diet on Chemical Constituents of Blood, J. Biol. Chem. **83**: 753, 1929.

DuBois[14] on 2 healthy white men who lived for a year on an exclusive meat diet. These investigators reported at the end of a year that:

> . . . in these trained subjects, the clinical observations and laboratory studies gave no evidence that any ill effects had occurred from the prolonged use of the exclusive meat diet.

This seemed to dispose of the fear that a diet liberal in protein is fraught with danger to the kidneys and arteries.

The other fear entertained by many physicians, that of "intestinal autointoxication," was disposed of by Alvarez[15] in his critical review. While this physician reached the Scotch verdict of "not proved," the testimony that has accumulated since his summary of evidence justifies the verdict of "not guilty." This hastened the end of the era of protein economy.

THE VITAMIN ERA

The fourth era, the most colorful of all, was introduced when it was found that an animal cannot live on purified diets alone. This era was foreshadowed many years earlier by Eijkman's observation[16] that something in the bran layer of the grain will protect fowls against the polyneuritis they show when fed a diet of milled rice. It was again forecast in 1911 when Funk[17] recognized the existence of deficiency diseases as we understand them today. It was the latter investigator who coined the word vitamin ("vitamine").

The present widespread interest in vitamins apparently began in 1913 when McCollum and Davis[18] observed that young animals restricted to a diet of purified casein, starch and lard, with an appropriate salt mixture, would not grow unless butter fat or egg yolk were added to the ration. About the same time Osborne and Mendel,[19] pursuing their experiments with similar diets, reported that not only was growth retarded in the young, but a characteristic disease of the eye developed in the older animals. These epoch-marking studies pointed to the existence of an important principle which is essential to growth, a fat-soluble factor, for which McCollum suggested the name vitamin A. Then Funk's "beriberi vitamine" was given the name water-soluble vitamin B and was subsequently split into its several components. Holst, Chick, Mendel and others demonstrated the existence of still another water-soluble vitamin, which was subsequently isolated from lemon juice by Waugh and King[20] and became known as vitamin C. In 1922, through the work of McCollum and his associates,[21] vitamin D came into recognition, and the discovery of still other vitamins followed. These substances were produced in pure form and their functions defined with a fair degree of accuracy. Many intricacies of metabolism were unravelled, and the vitamin era came into full development.

The minerals have never fired the imagination of the public, or indeed of the profession, as have the vitamins, but during this period nutritionists have continued to emphasize the need for an adequate supply of minerals, notably of calcium and iron. More recently, the part played in the human economy by certain "trace elements" is being studied and encouraging results can dimly be envisaged.

Accompanying this development of the vitamin era was a reawakening of interest in deficiency diseases. This interest had its beginnings two centuries earlier when the English surgeon Lind demonstrated that lemon juice or orange juice would cure scurvy, the scourge of the sea. The importance of these disorders was shown again in 1880 when Takaki almost eliminated beriberi from the Japanese navy with a more liberal ration, and still again in the first decade of this century when Fraser and Stanton[22] in Java and Chamberlain and Vedder[23] and others in the Philippine Islands were able to prevent beriberi by the substitution of whole rice for the unpolished grain. Present day interest in deficiency diseases, however, began when Searcy[24] in 1907 identified the strange disease then epidemic in the South as pellagra; when a few years later Goldberger[25] predicated his pellagra-preventive factor, and when in 1937 Elvehjem and his associates[26] found that black tongue in dogs, the analogue of pellagra in man, can be cured with nicotinic acid. This last discovery gave great impetus to the study of deficiency diseases, and, with brilliant results, opened up an entirely new area of nutritional investigation. The field has been assiduously cultivated. The soil was rich and the yield has been excellent.

In the treatment of these disorders results have been graphic. The public caught the enthusiasm, and now every one knows about vitamins and wants them. They are bought over the counter at drug stores indiscriminately and in enormous amounts, with benefit to many and without benefit to others. As this enthusiasm levels out, however, certain conservative tendencies may be seen. First is the recognition by nutritionists that if a person is well nourished and his vitamin equipment adequate then no nutritional benefit will accrue from the further taking of these substances. Evidence to this effect can be found in a number of publications dealing with the nutrition and health of workers in industry, notably in a recent article published by the Council on Foods and Nutrition and the Council on Industrial Health of the American Medical Association.[27]

A second conservative tendency is seen in the recognition that man should, as a rule, take his vitamins in the form of natural foods. Important as vitamins are—vitally so in the treatment of deficiency states—physicians are now coming to the realization that for the simple maintenance of robust health one should secure these substances, not from the pharmacist, but from the grocer and the dairyman. Helpful guidance to this end is being provided by many investigators in their extensive contributions to the knowledge of food composition, notably by Elvehjem and his co-workers. The

14. McClellan, W. S., and DuBois, E. F.: Clinical Calorimetry: Prolonged Meat Diets with a Study of Kidney Function and Ketosis, J. Biol. Chem. **87**: 651, 1930.
15. Alvarez, W. C.: Intestinal Autointoxication, Physiol. Rev. **4**: 352, 1924.
16. Eijkman, C.: Eine Beriberi ähnliche Erkrankung der Hühner, Virchows Arch. f. path. Anat. **148**: 523, 1897; Ein Versuch zur Bekämpfung der Beri-Beri, ibid. **149**: 187, 1897.
17. Funk, C.: Chemical Nature of the Substance Which Cures Polyneuritis in Birds Induced by a Diet of Polished Rice, J. Physiol. **43**: 395, 1911.
18. McCollum, E. V., and Davis, M.: The Necessity of Certain Lipins in the Diet, J. Biol. Chem. **15**: 167, 1913.
19. Osborne, T. B., and Mendel, L. B.: Relation of Growth to Chemical Constituents of Diet, J. Biol. Chem. **15**: 316, 1913.
20. Waugh, W. A., and King, C. G.: Isolation and Identification of Vitamin C, J. Biol. Chem. **97**: 325, 1932.
21. McCollum, E. V.; Simmonds, N., and Becker, J. E.: Studies on Experimental Demonstration of Existence of a Vitamin Which Promotes Calcium Deposition, Bull. Johns Hopkins Hosp. **33**: 229, 1922.
22. Fraser, H., and Stanton, A. T.: The Etiology of Beri-Beri, Tr. Soc. Trop. Med. & Hyg. **3**, 1910; Lancet **2**: 1755, 1910.
23. Chamberlain, W. P., and Vedder, E. B.: Contributions to the Etiology of Beriberi, Philippine J. Sc. **6**: 251, 395, 1911.
24. Searcy, G. H.: An Epidemic of Acute Pellagra, J. A. M. A. **49**: 37 (July 6) 1907.
25. Goldberger, J.: Pellagra: Causation and Method of Prevention, J. A. M. A. **66**: 471 (Feb. 12) 1916.
26. Elvehjem, C. A., and others: Relation of Nicotinic Acid and Nicotinic Acid Amide to Canine Blacktongue, J. Am. Chem. Soc. **59**: 1767, 1937.
27. Indiscriminate Administration of Vitamins to Industrial Workers, Report of the Council on Foods and Nutrition and the Council on Industrial Health, J. A. M. A. **118**: 618 (Feb. 21) 1942.

vitamin era is being rounded out with a wholesome appreciation of the importance of simple, good food. A few nutritionists are even calling themselves "ham and egg nutritionists."

THE PROTEIN ERA

The picture changes, and today we are in the protein era. As Lewis [28] observed in his excellent review, the regard in which this foodstuff is held today is in keeping with the origin of the name, from the Greek "first" (*πρωτεῖος*). This greater appreciation of the value of protein received its first impetus about ten years ago when Rose [29] told of feeding experiments on rats that revealed the indispensability of ten of the known twenty-two amino acids. He demonstrated that it is possible to maintain life in the rat when a suitable mixture of amino acids is the only source of nitrogen. Shortly thereafter, Shohl and Blackfan [30] accomplished the same in infants. Later, the indispensability of certain of these bodies to man, as well as to the rat, was shown by Albanese and his associates,[31] who observed that when lysine and tryptophane were withdrawn from the human diet a negative nitrogen balance resulted, which condition could be corrected only by restoration of the missing substances. That amino acid deficiency has specific effects became evident in the discovery that the removal of arginine from the diet causes a notable reduction in spermatozoa in the seminal plasma and that the content of spermatozoa becomes normal again when this amino acid is restored to the diet. Such specificity is now recognized, and in the opinion of nutritionists amino acid deficiency will make itself felt even more promptly than vitamin deprivation. Differences among species no doubt exist, but the available evidence indicates that, qualitatively, the requirements of man and the white rat for amino acids are similar and that the table of dispensable and indispensable amino acids constructed by Rose from his experiments on animals can be applied without too many exceptions to man.

This availability of amino acid mixtures as a food has widened the nutritionist's horizon and has stimulated manifold animal experiments and clinical trials. There is still a question, however, as to whether a mixture of pure amino acids can completely and for all purposes replace the protein of the diet, for evidence has been presented suggesting the need under certain conditions for accessory factors which are themselves derived from the protein molecule. Elvehjem [32] expressed the opinion that the answer to this question depends largely on the age of the animal. Opportunities for the use of amino acids as a substitute for protein appear almost unlimited but, as this author stated:

> . . . In the light of the work on amino acid imbalance it is apparent that each amino acid must be supplied in optimum concentration before the need for accessory . . . compounds can definitely be settled.

There is still much to be learned regarding the proper concentrations of the individual amino acids to be used in such mixtures. It is stated, therefore, by the Council on Foods and Nutrition of the American Medical Association that amino acid mixtures and protein hydrolysates containing such mixtures should be reserved for use in those cases in which parenteral feeding is necessary. If the stomach is retentive, whole protein, such as is provided by milk, meat or eggs, should be given.

The part played by protein in the metabolism of the cell has been greatly clarified in recent years and some of our older concepts must be radically revised. The present opinion is that the proteins of the body cell are not the fixed parts of a permanent structure, like the steel framework of a building, but are labile substances in a constant state of change. The first evidence of this was seen in the experiments with isotopic nitrogen of Schoenheimer and Rittenberg,[33] who reported that the protein equipment of all living cells is subject to a rapid and continuous regeneration and that in spite of this constant chemical interchange the composition of the tissues remains surprisingly the same. A few years later, Whipple and Madden [34] also demonstrated that proteins are not held in the manner that carbohydrate and fat are stored, but exist rather in a highly mobile state in which their fractions are in constant exchange. The latter workers showed that the body maintains in the plasma and in the cells a large pool of circulating proteins which are in dynamic equilibrium, and that the contributions to this pool may concern any body cell needing protein or capable of storing surplus protein.

> . . . The circulating plasma protein is the medium of exchange and the body is solvent just so long as there [are] adequate protein supplies for any emergency. When the body becomes insolvent, there may be foreclosure due to disease, infection, or injury.

Physicians at the bedside have often witnessed such foreclosure.

Still further interest in protein has been stimulated by a host of recent clinical observations. Prominent among these reports is the testimony that has come from many sources telling of the pressing need in respect to protein of the pregnant woman and the nursing mother, as seen especially in report of Ebbs, Tisdall and Scott.[35] These authors told of remarkable benefits to both mother and child from a few simple additions to the diet. Bethell and his associates [36] saw a positive correlation between macrocytic anemia and an inadequate intake of protein, and Leverton and McMillan [37] wrote to the effect that a generous serving of meat given daily to pregnant women, in addition to their self-chosen diets, is effective in increasing hemoglobin and red blood cell concentration, avoiding edema and promoting lactation. Williams [38] concluded in his summary of evidence that:

> . . . It seems reasonably sure that pregnant women with liberal intakes of protein seldom develop the specific toxemia of pregnancy. . . .

28. Lewis, H. B.: Protein in Nutrition, in Handbook of Nutrition, Chicago, American Medical Association, 1943, p. 13.
29. Rose, W. C.: The Nutritive Significance of the Amino Acids and Certain Related Compounds, Science **86**: 298, 1937; The Nutritive Significance of the Amino Acids, Physiol. Rev. **18**: 109, 1938.
30. Shohl, A. T., and Blackfan, K. D.: The Intravenous Administration of Crystalline Amino-Acids to Infants, J. Nutrition **20**: 305, 1940.
31. Albanese, A. A.; Holt, L. E., Jr.; Brumback, J. E., Jr.; Hayes, M.; Kajdi, C., and Wangerin, D. M.: Nitrogen Balance in Experimental Lysine Deficiency in Man, Proc. Soc. Exper. Biol. & Med. **48**: 728, 1941; Brumback, J. E., Jr.; Kajdi, C., and Wangerin, D. M.: Nitrogen Balance in Experimental Tryptophane Deficiency in Man, ibid. **48**: 726, 1941. Holt, L. E., Jr.; Albanese, A. A.; Shettles, L. B.; Kajdi, C., and Wangerin, D. M.: Studies of Experimental Amino Acid Deficiency in Man: I. Nitrogen Balance, Federation Proc. **1** (pt. 2): 116, 1942.
32. Elvehjem, C. A.: Recent Progress in Nutrition and Its Relation to Drug Therapy, J. A. M. A. **136**: 915 (April 3) 1948.
33. Schoenheimer, R., and Rittenberg, D.: The Study of Intermediary Metabolism of Animals with the Aid of Isotopes, Physiol. Rev. **20**: 218, 1940.
34. Whipple, G. H., and Madden, S. C.: Hemoglobin Plasma Protein and Cell Protein, Medicine **23**: 215, 1944.
35. Ebbs, J. H.; Tisdall, F. F., and Scott, W. A.: The Influence of the Prenatal Diet on the Mother and Child, J. Nutrition **22**: 515, 1941.
36. Bethell, F. H.; Gardiner, S. H., and MacKinnon, F.: Influence of Iron and Diet on Blood in Pregnancy, Ann. Int. Med. **13**: 91, 1939.
37. Leverton, R. M., and McMillan, T. J.: Meat in Diet of Pregnant Women, J. A. M. A. **130**: 134 (Jan. 19) 1946.
38. Williams, P. F.: Importance of Adequate Protein Nutrition in Pregnancy, in Protein Nutrition in Health and Disease, Chicago, American Medical Association, 1943, p. 15.

No longer does the obstetrician tell his patient that to avoid eclampsia and the other perils of pregnancy she must restrict the protein of her diet; now he tells her that she had best eat an abundance of good protein.

There is evidence, too, that both the welfare and the proper development of the offspring depend in no small degree on the adequacy of the expectant mother's diet. Burke and her associates [39] concluded from their statistical studies in the department of child hygiene of the Harvard School of Public Health that there is a significant relationship between the diet of the mother during pregnancy and the condition of her infant at birth. From the same school came a report by Stuart [40] who, by means of roentgenograms, showed that proper osseous development at birth depends to a large degree on the suitability of the mother's diet and that protein is a factor in determining the adequacy of this diet.

Significant, too, are the reports which tell of the part played by protein in resistance to infection. Cannon [41] wrote of the dependence of phagocyte formation on plasma protein levels and cited the observations of Cottingham and Mills indicating that in rats a direct relationship exists between the amount of protein consumed and the efficiency of phagocytic activity. More important still is the part played by protein in antibody formation. Cannon pointed out that the antibody globulins of the blood are simply normal serum globulins which have been specifically altered and that adequate production of these is dependent on a sufficient intake of amino acids. He assumed, therefore, with good reason that antibody production is dependent on protein intake. This has been demonstrated experimentally by Cannon and his associates,[42] who observed that animals subjected to prolonged protein undernutrition exhibit a pronounced loss of the capacity to fabricate antibodies and to resist infection and that this loss can be quickly made good by addition to the ration of liberal amounts of good protein. Accumulating evidence indicates that protein plays a fundamental role in the maintenance of both natural and acquired resistance.

PROTEIN IN SURGICAL AND MEDICAL TREATMENT

One of the most interesting developments in the evolution of the protein era has been the awakening of surgical interest. In their article, Lund and Levenson [43] told of the large, sometimes enormous, nitrogen losses that have been reported in acute trauma and after surgical operations, and of the generally harmful effects of protein deficiency in surgical patients. Whipple [44] and others described the prolonged lag period in the healing of wounds and of the increased danger of wound rupture when protein nutrition is poor. Proof of this is seen in the animal experiments of Kobak and his co-workers,[45] who observed that the tensile strength of the abdominal wounds of protein-deficient rats was only one-third that of the controls. Elman [46] wrote of the severe shock that develops from surprisingly small losses of blood when the plasma proteins are already low. According to the studies of Mulholland and his associates,[47] even bedsores are more frequent when the plasma protein content is low, and the hypothesis is offered that these sores represent pressure necrosis in tissues which have been devitalized by protein deficiency. Surgical opinion today is in apparent agreement with Co Tui [48] when, from his studies of surgical repair, he concluded:

> Proteins are essential to wound healing, to the maintenance of tissue integrity, and from present indications, to expeditious convalescence. Protein deficiency endangers all three.

Medical opinion likewise has come to a wholesome appreciation of the need for liberal amounts of protein in the diet of the sick person. This trend apparently had its beginnings about fifteen years ago in the radical change which took place in the feeding of patients with Bright's disease. Aldrich and Boyle,[49] after observing 300 children with nephritis, impressed by the grievously ill state of most of them, discarded all preconceived ideas of diet and ordered meat or eggs three times daily. After two years' experience with this innovation, they reported that the majority of their patients showed definite clinical improvement and that the death rate was decidedly lower. At about the same time, McCann [50] also reported significant improvement in a group of nephritic patients after the allowance of protein was materially increased, in some instances doubled. Like reports came from other sources, and now patients with nephritis are fed with much greater consideration for their nutritive needs.

Less startling, but perhaps equally effective, was the introduction of more liberal amounts of protein in the diets of patients with peptic ulcer. Recently, Co Tui [48] reported early healing, with unusually prompt relief from pain and rapid gain in strength, in 29 patients with ulcers whose nitrogen intake, largely in the form of protein hydrolysates, was about three times that commonly allowed. Other physicians gave ground meat a prominent place in the diet for patients with ulcers and also reported encouraging results. Improvement follows in many other forms of illness when the physician induces his patient to eat more meat. This is particularly true of so-called neurasthenia. The treatment of syndromes of this character with an abundant diet, in which is included liberal amounts of protein, is often more effective than psychotherapy. This is equally true of the neurasthenic syndrome that accompanies many deficiency states. Pellagra as one ordinarily encounters it can seldom be cured completely by the administration of nicotinic acid and the other vitamins of the B complex alone. The patient needs good protein, and he rapidly regains his equi-

39. Burke, B. S.; Harding, V. V., and Stuart, H. C.: Nutrition Studies During Pregnancy: IV. Relation of Protein Content of Mother's Diet During Pregnancy to Birth Weight and Condition of Infant at Birth, J. Pediat. **23**: 506, 1943.

40. Stuart, H. C.: Findings on Examination of New Born Infants and Infants During Neo-Natal Period Which Appear to Have Relationship to Diets of Their Mothers During Pregnancy, Federation Proc. **4**: 271, 1945.

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librium when he gets it. A more obvious illustration of the need for protein is seen in the nutritional edema described in this country by Youmans and his associates [51] and encountered throughout the world wherever food shortages prevail. Examples could be multiplied.

The most dramatic about-face, however, which has been accomplished in the recent history of nutrition has been in the feeding of patients with diseases of the liver. It was not many years ago that protein foods were regarded as especially damaging to the sick liver. Large quantities of carbohydrate were given to protect this organ and to promote repair. The fallacy of this treatment was pointed out less than a decade ago by Mann,[52] who from his experiments involving extirpation of the liver concluded that the organ is best prepared to meet stress when its stores of both protein and carbohydrate are ample. Similar conclusions were drawn by others, notably Messinger and Hawkins,[53] who demonstrated that protein is most effective in protecting dogs against injury to the liver from arsphenamine, and by Ravdin and his associates,[54] who saw best protection for the liver against the stress of operation when at least 20 per cent of the calories of the diet were derived from protein. Clinical application was made of this by Patek and Post,[55] who accomplished results definitely beyond expectation in their patients with cirrhosis of the liver by giving them diets of 2,900 to 3,000 calories in which was included 116 to 135 Gm. of protein. More recently, Morrison [56] reported like results in cirrhosis with a diet that provided 200 to 300 Gm. of protein daily. The regimen devised for patients with cirrhosis at the Hospital of the Rockefeller Institute for Medical Research [57] included diets high in protein and rich in carbohydrate, but the excellent results accomplished in that hospital were credited largely to the appetite-restoring effects of crude liver extract. In a disease that formerly was regarded as invariably fatal, this high protein, low fat regimen, which includes also the administration of large quantities of vitamins and crude liver extract, is accomplishing unexpectedly happy results.

A similar diet is now used in treatment of infectious hepatitis. Capps and Barker [58] gave their patients with this disease 200 Gm. of protein daily, and Berger [59] described in detail a diet of 3,500 calories successfully used in the Mediterranean Theater of Operations which provided 225 Gm. of protein. This is a great deal of food to offer a patient, but with good nursing he can be induced to take it. What would the physician of thirty years ago have thought of prescribing 225 Gm. of protein daily for a jaundiced man with high grade fever and a large, tender liver? He would have stood aghast, but the general adoption of this regimen gives testimony to the high value placed on protein today.

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CONCLUSION

I should like to conclude with a question. The protein quota of the American soldier's ration in the second World War was liberal—more liberal than that of any other soldier in the world—not the 70 Gm. of today's recommended daily allowance, or the 100 Gm. of Lusk, or the 120 Gm. of Atwater—but 140 Gm., and he ate it all. Measured in terms of greater vigor, quicker and more assured recovery from injury and a higher degree of morale, did this liberality of protein allowance in the American soldier's ration contribute to the winning of the war? I believe it did.

930 South Twentieth Street.

USE OF STREPTOMYCIN IN SURGICAL PATIENTS

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and
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Since the discovery of streptomycin by Waksman [1] (in 1944) data have been obtained which show the value of this drug as an adjunct to the surgical treatment of pulmonary tuberculosis. The demonstration that streptomycin had a beneficial effect on tuberculosis in the guinea pig by Feldman [2] and the report that this drug seemed to improve patients with pulmonary tuberculosis by Hinshaw [3] in 1946 have been followed by other studies concerning the value of streptomycin in pulmonary tuberculosis.

The largest number of cases in which pulmonary tuberculosis treated with streptomycin was evaluated has been collected under the auspices of the Veterans Administration.[4] (Over 3,000 patients with various types of tuberculosis have been treated.) It was found that those patients in whom a beneficial effect was obtained showed clinical response within the first two weeks of therapy. Approximately 60 per cent became afebrile after the administration of streptomycin. It was also found that this agent had little if any beneficial effect on long-standing fibrous tuberculous lesions or caseous lesions. The response of tuberculous pulmonary cavities was variable. Good results were obtained in improving exudative forms of disease while the drug was administered.

The concept of appropriate dosage of streptomycin has been changed.[4c] The present feeling is that as good response can be obtained with 1.0 Gm. of streptomycin given in two doses daily as with the higher doses. One-half gram per day in one dose is probably just as effective as the 1 Gm. a day dose, but not enough data

From the Department of Surgery, George Washington University Medical School.
Read in the Session on Diseases of the Chest before the Section on Miscellaneous Topics at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 24, 1948.

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have yet been accumulated to permit one to be certain of this fact.

In the Veterans Administration study an arbitrary duration of treatment was chosen. The patients who were to be treated surgically for pulmonary lesions were given streptomycin seven days prior to and for fourteen days after operation. It is possible that shorter courses than this may be effective, but more data will be needed.

The toxic complications are greater with the higher dose.[4c] With 1 Gm. per day there has been a decided reduction in the toxic manifestations. The 0.5 Gm. per day dose has practically no toxic effects. The toxic symptoms are apparently related to the level of streptomycin in the blood. It is interesting that 1.0 Gm. of streptomycin given in five doses a day has a higher rate of toxic complication than does 1.0 Gm. in two doses per day. It would seem from this that the

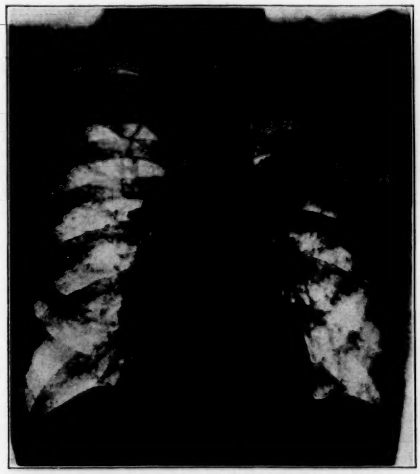

Fig. 1.—Roentgenogram of the chest of a 55 year old Negro man with tuberculosis of the left lung.

sustained blood level of streptomycin per se is more toxic than an inconstant level.

Studies have been carried out to learn the absorption rate of streptomycin from the pleural cavity and to learn the pathologic effect of streptomycin on the pleural serosa.[5] It was found that 0.5 Gm. of streptomycin in one dose in the pleural cavity of the dog did not produce any detectable harmful pathologic effects in pleura examined seven days after administration of the streptomycin. It was also found that 0.5 Gm. of streptomycin placed in the pleural cavity of the patient at the time of open thoracotomy produced high blood levels of streptomycin, which were reached rapidly. There were no apparent differences between decidedly scarred and unscarred pleuras. Levels as high as 25 micrograms per cubic centimeter were reached in thirty minutes, which fell gradually during the course of the next four hours and at the end of eight hours had fallen to approximately 1 to 2 micrograms per cubic centimeter.

5. Beattie, E. J., Jr.; Blades, B., and Horton, C.: Experimental and Clinical Studies of the Role of Streptomycin in the Pleural Cavity, J. Thoracic Surg., to be published.

Studies [4c] concerning the resistance of the tubercle bacilli have demonstrated that in vitro nearly all tubercle bacilli will not grow in 10 micrograms per cubic centimeter of streptomycin. Most tubercle bacilli will

Fig. 2.—Roentgenogram of the chest after three stages of thoracoplasty had been carried out on the patient seen in figure 1. The thoracoplasty was a failure in that the sputum was still positive and tuberculous bronchiectasis in the lower lobe could be demonstrated by a bronchogram.

Fig. 3.—A roentgenogram of the chest taken after a left pneumonectomy had been performed on the patient pictured in figures 1 and 2. The patient is now afebrile, asymptomatic and gaining weight.

stop growing in only 1 microgram per cubic centimeter. However, after one hundred and twenty days of treatment with streptomycin it has been found that 70 per cent of tubercle bacilli will grow in 10 micrograms

per cubic centimeter of streptomycin, that the majority of tubercle bacilli will grow in over 100 micrograms per cubic centimeter and many will grow in over 1,000 micrograms per cubic centimeter. The length of time

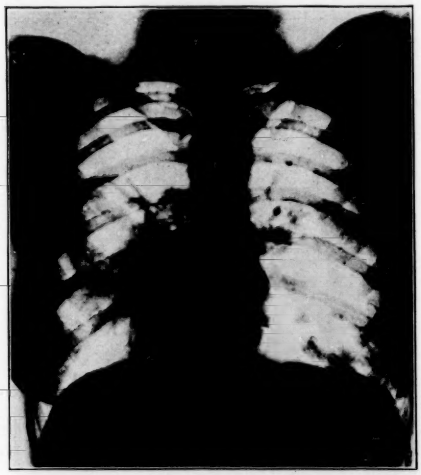

Fig. 4.—Roentgenogram of the chest of a 30 year old white housewife with tuberculous tension cavity in the upper lobe of the left lung. The patient was very sick with a high temperature.

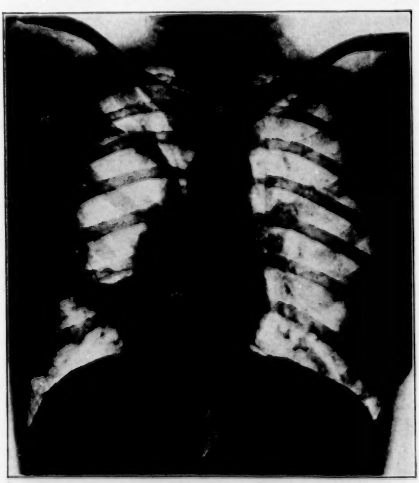

Fig. 5.—Roentgenogram of the patient shown in figure 4. She was treated with streptomycin. The cavity had diminished in size, and she had only a low grade fever at this point.

that it takes for a tubercle bacillus to develop resistance [6] is variable. Apparently it can develop in as little as six weeks.

6. Romansky, M. J.: Streptomycin Studies, personal communication to the authors.

Prior to the use of streptomycin as an adjunct in pulmonary resection for pulmonary tuberculosis there were 600 cases of resection reported in the American literature since 1933.[7] Of these 600 cases resection was done in 520 after 1942. In this series the total operative mortality rate was 25 per cent. The operation in 12 per cent of the cases was followed by empyema and in 8 per cent by complicating bronchopleural fistulas. Reports of large series of thoracoplasties prior to the use of streptomycin had shown a rate of spread or reactivation of the tuberculosis of approximately 3 to 6 per cent.[7] Empyema following thoracoplasty was rare. Overholt [8] reported that in 104 cases of pulmonary resection without streptomycin for tuberculosis between March 31, 1944 and April 5, 1946, there were 16 deaths, a 15 per cent mortality rate.

The Veterans Administration [7] conducted a study of the value of streptomycin protection for thoracoplasty. In this they had a control series of 249 patients

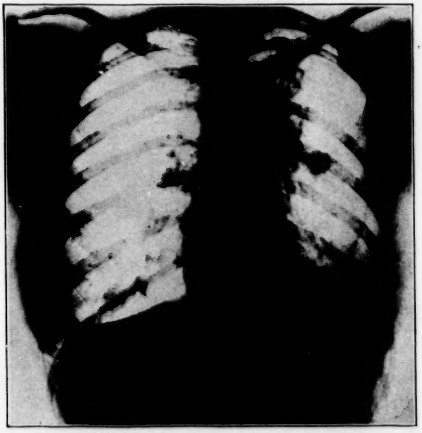

Fig. 6.—This is a film taken post-operatively on the patient shown in figures 4 and 5. The upper lobe of the left lung was removed.

who underwent 648 thoracoplasties. There were 36 cases of tuberculous spread or reactivation (5.6 per cent) and 16 cases of wound infection (2.4 per cent). There were 258 cases in which there were 699 thoracoplasties protected with streptomycin. There were 14 cases of tuberculous spread or reactivation (2 per cent) and 8 cases of wound infection (1.1 per cent). This seems statistically significant, but in a breakdown of the figures from the various clinics it seems probable that there is not a significant difference.

Various authors have reported decidedly beneficial effects of streptomycin in pulmonary resections for tuberculosis. The Veterans Administration [7] reported that in 129 cases of pulmonary resection there have been 5 operative deaths and 1 postoperative death (4.5 per cent mortality rate). There have been 4 cases of tuberculous spread in this series, 8 cases of complicating bronchopleural fistulas, 5 cases of empyema and

7. Streptomycin in the Surgery of Pulmonary Tuberculosis, Veterans Administration, Streptomycin Committee, unpublished data.

8. Overholt, R. H.; Langer, L.; Szypulski, J. T., and Wilson, N. J.: Pulmonary Resection in the Treatment of Tuberculosis, J. Thoracic Surg. **15**: 384, 1946.

6 cases of infection. Moore,[9] in reporting 70 cases of resection in which streptomycin was used, reported 7 per cent operative mortality with 3 per cent tuberculous spreads, 3 per cent complicating bronchopleural fistulas, 2 per cent empyemas and no wound infections. Bailey,[10] in contrasting results in 100 cases of pulmonary resection without streptomycin and those in 100 cases of pulmonary resection with streptomycin, reported that in the 100 of the control series there was a 25 per cent operative mortality rate, 18 per cent tuberculous spread, 8 per cent complicating bronchopleural fistulas and 11 per cent empyemas, whereas in the 100 cases in which streptomycin was used there was an operative mortality rate of 14 per cent with only 1 per cent tuberculous spread, 1 per cent complicating bronchopleural fistulas and 2 per cent empyemas. The Veterans Administration series showing a 4.5 per cent operative mortality rate, in contrast with the reported cases prior to the use of streptomycin with a 25 per cent mortality rate, is striking.

We had a relatively small series of desperate risk patients in whom pulmonary resections and thoracoplasties have been carried out with streptomycin protection. Until June 15, 1948, 15 patients had been operated on who had had 38 thoracoplasties. There were 14 consecutive patients who had pulmonary resections; there were 9 patients who had open pneumonolyses. The dosage of streptomycin used in these cases has changed as more knowledge about the dosage of streptomycin has been obtained. The patients with recent resection received 1.0 Gm. of streptomycin per day in two divided doses for one week prior to operation and two to three weeks following operation. At the time of operation they also received 0.5 Gm. of streptomycin into the pleural cavity. Some of the patients with thoracoplasty received 1.0 Gm. in two doses for one week prior to and two weeks after thoracoplasty, but a considerable number received 0.5 Gm. for one day prior to and four days following operation. All patients have received penicillin in addition to the streptomycin. In this series there have been no deaths and no postoperative spreads. There were 2 cases in which there was a serious impairment of hearing resulting from prolonged courses of streptomycin (2.0 Gm. per day) given in outside sanatoriums. Another patient, operated on too recently to be included in the report, came to us as a desperate risk for resection, having already received enough streptomycin in an outside hospital to make her tubercle bacilli resistant to streptomycin. In spite of combined streptomycin and para-aminosalicylic acid therapy, it seems as if she may have a contralateral tuberculous spread.

This is a small series in which the numbers are not statistically significant, but when one considers the desperate nature of these cases it is probably an important commentary on the value of streptomycin that none of these patients have died or had serious complications. Without streptomycin it could certainly be expected that serious complications should have arisen. The accompanying roentgenograms illustrate results in 2 cases in which pulmonary resections were carried out.

COMMENT

According to the American literature 600 cases of resections for pulmonary tuberculosis have been reported since 1933 without the use of streptomycin. In these cases there has been a 25 per cent operative mortality rate, with 12 per cent empyemas and 8 per cent complicating bronchopleural fistulas. In thoracoplasty for pulmonary tuberculosis a 3 to 6 per cent rate of tuberculous spread with rare empyemas can be expected. In using streptomycin the Veterans Administration reported that in 129 cases they had a 4.5 per cent operative mortality rate. Others have shown comparable reductions in operative mortality. Analyses of 3,000 cases in which streptomycin was used in the Veterans Administration series revealed that 1.0 Gm. in two divided doses per day is probably the optimum dose. Streptomycin therapy should be started seven days prior to and continued for fourteen days after operation. The toxic effects are nearly eliminated with this dosage. Pleural absorption of streptomycin is rapid, and high levels are reached in one hour. Resistance of the tubercle bacillus to streptomycin develops promptly. The exact time is not known, but the bacilli may become resistant in forty days. In a small series reported here, of 38 thoracoplasties, 14 resections and 9 open pneumonolyses, there have been no deaths and no spreads.

Sweet[11] reported a follow-up study of 27 patients with lobectomy and 36 with pneumonectomy at least one year following operation. Of the 27 patients with lobectomy 2 died postoperatively, 5 died of tuberculosis, 7 were alive with positive sputum and 13 were well with normal sputum. Of the 36 patients with pneumonectomy 7 died postoperatively, 7 died later of disease, 5 were alive with positive sputum, 1 was clinically well with positive sputum and 16 were well with normal sputum.

We have followed a policy of doing phrenic nerve crushes for lower lobe lobectomies, partial thoracoplasties for upper lobe lobectomies and thoracoplasties following pneumonectomies in patients who had not had collapse measures carried out prior to resection.

The elapsed time postoperatively has not been long enough to permit analysis of the postoperative condition of the patients in our series.

With the added protection which streptomycin affords pulmonary resection for tuberculosis it is technically possible to carry out major resection in desperate risk patients. However, one must be cautious in removing large amounts of lung tissue. We have already seen evidence that the pulmonary reserve in these patients may be inadequate for normal living, even though the tuberculosis is eradicated.

CONCLUSION

Streptomycin is a valuable adjunct in the surgical treatment of pulmonary tuberculosis. The immediate complications are decidedly reduced. Not enough time has yet elapsed to determine that the long range survival rate will be better in the patients treated with streptomycin than in those undergoing resection for pulmonary tuberculosis prior to the use of streptomycin.

In a series of desperate risk cases of pulmonary tuberculosis treated surgically there have been no deaths and no spreads. The fact that resistance of the tubercle bacillus to streptomycin develops in as little as six weeks makes it important that streptomycin be reserved for surgical treatment in any cases which may potentially be surgical. It should not be used in the cases of minimal pulmonary tuberculosis.

9. Moore, J. A.: Murphy, J. D., and Elrod, P. D.: An Evaluation of Streptomycin as a Protective Agent in Pulmonary Resections for Tuberculosis, J. Thoracic Surg., to be published.

10. Bailey, C. P.; O'Neill, T., and Glover, R. P.: Results in Pulmonary Resection for Tuberculosis (One Hundred Cases Without Streptomycin Contrasted with One Hundred Cases Operated with Streptomycin Therapy), J. Thoracic Surg., to be published.

11. Sweet, R. H.: Lobectomy and Pneumonectomy in the Treatment of Pulmonary Tuberculosis, J. Thoracic Surg. 15: 373, 1946.

ABSTRACT OF DISCUSSION

DR. EMIL BOGEN, Olive View, Calif.: No doubt the administration of streptomycin prior to operation may lead to regression of soft exudative, components of lesions and decided reduction in sputum volume and bacillary content, but for such preparation it would generally be expected that treatment for more than a few days to a week before operation should be given to obtain the maximum effect in this direction. If streptomycin were actually bactericidal, its administration at the time of operation might be of value, but, since my own experiments and those of many others indicate that its effect is purely to retard multiplication of the bacilli and that it does not kill them, this local or simultaneous administration may give the surgeon undue confidence in a futile effort. Similarly, streptomycin administered after operation is extremely effective in the treatment of any spreads or reactivation which may have occurred as a result of aspiration, dissemination or trauma during the operation. If such spreads occur it would scarcely seem adequate to treat them for only a week or two following their production. It would seem wiser, therefore, for surgeons to withhold streptomycin during and for a short time following the operation, until evidence of spread or infection of the chest has actually been observed, whereupon adequate treatment for at least a month, or six weeks, might better be expected to care for such complications. Otherwise, patients may show spreads after cessation (two weeks after resection) of the usual so-called protective regimen. I wish to ask Dr. Beattie and Dr. Overholt whether in their experience spreads are not more apt to occur after the second rather than the first stage of thoracoplasty and whether delayed spreads, some months after resections, are not more to be feared than immediate spreads at the time of operation. If this is generally true, would it not be wise to retain sensitivity to streptomycin on the part of the tubercle bacilli remaining in the chest by withholding the treatment until such complications have developed? Administering streptomycin for an illusory protection before and at the time of operation may result in the development of resistant forms of tubercle bacilli which may prove refractory to treatment administered at a later time when it might be more logically expected to be of value. Streptomycin is a wonderful agent for the preparation of tuberculous patients for surgical treatment of the chest, making possible operations on many patients who would otherwise not be able to receive such treatment and greatly lessening the dangers of the operation. It is also a valuable agent for the treatment of any spreads or reactivations which may occur as a result of operation.

DR. RICHARD H. OVERHOLT, Boston: I am inclined to agree that the word protection is not the right one to use in this connection. Each surgeon is interested in conducting all patients through the operation as safely as possible. He is balancing risks. There are certain hazards in anything he does, and there is also a hazard in the disease. If it is possible to prepare a patient by various methods so that the risk of operation will be reduced, then, of course, those methods should be used.

DR. EDWARD J. BEATTIE, Washington, D. C.: In reply to questions that were brought up, the Veterans Administration study was carried out to see whether streptomycin is really necessary in patients who are to have thoracoplasty. At present we do not seem to have enough information to warrant the use of streptomycin in the ordinary case, but there is also the problem of whether thoracoplasty cannot be done in cases in which the operation previously had been refused because the disease was too acute or the patient was too febrile at the time. As regards the duration of treatment, we feel that, if the decision is made to use streptomycin during the course of the thoracoplasty, in as much as resistance seems to develop in most cases in one hundred and twenty days and in many cases in six weeks, it is necessary to use an elapsed time so that all the thoracoplasty can be carried out while the tubercle bacillus is still sensitive to streptomycin. Since thoracoplasty takes in about four to six weeks, that is the determining factor. The Veterans Administration has proved that there is little doubt that streptomycin cuts down the incidence of postoperative complications, which has been high in most of the previous reports. As regards the long term follow-up, what will happen later in the cases of resection in which there has been preparation with streptomycin, we are not prepared to say. It will take a longer time to follow up these cases.

DIAGNOSIS AND TREATMENT OF INDUSTRIAL SOLVENT POISONING

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Akron, Ohio

Many different kinds of solvents are used in industry today. Some of these are rather toxic. Every practicing physician is liable to encounter patients who are suffering from the effects of overexposure to these solvents. It is well, therefore, to become aware of their toxic properties and to review the symptoms and treatment of overexposure to them.

The common solvents can be classified into groups. These include the aromatic hydrocarbons, the chlorinated hydrocarbons, petroleum distillates, ketones, esters, alcohols and carbon disulfide. The toxicity of these compounds varies considerably. It is impossible to discuss here all of the various members of these groups; consequently, for the sake of brevity, representative members will be discussed.

AROMATIC HYDROCARBONS

Representative of the aromatic hydrocarbons is benzene. It is considered to be one of the most dangerous of the industrial solvents. It can be absorbed by the respiratory tract, the alimentary tract and probably the skin.

Cases of poisoning in human beings have been found with exposure to atmospheric concentrations as low as 25 parts per million. Concentrations of 50 to 100 parts per million are considered to be safe for the average person. Individual susceptibility varies. Acute benzol poisoning is rare. The symptoms of acute poisoning are referable to the central nervous system. There are muscular tremors, salivation, violent twitching, exhaustion, narcosis, paralysis, convulsions and death from paralysis of the respiratory center.

Patients exposed to concentrations of vapors between 50 to 500 parts per million, with the average concentration being about 100 parts per million, show symptoms of lassitude, malaise, nausea, vomiting, dizziness and headaches. Macular dermatitis may appear. As exposure continues symptoms become more severe. Hemorrhages under the skin and from the body cavities may occur. Ecchymosis and petechiae may be the first symptoms noted. Diplopia, especially for close distances, occurs in some cases. If the person is highly susceptible, or if the exposure has been great and prolonged, he may get physiologic or functional depression of the bone marrow. This varies in degree from a slight hemopoietic suppression to a total bone marrow aplasia.

The symptoms of a total aplasia are usually those of benzol absorption followed by prostration. On the other hand, it is sometimes strange how well the patient may appear. Aside from fatigue there may be no other complaints.

Read in a Joint Meeting of the Section on General Practice and the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

The best index of benzol absorption is the blood cell count. All components of the blood are affected, being lowered. Most important, the total leukocyte count falls. Special reference should be made to the differential count. The ratio of polymorphonuclear cells to monocytes is changed. The number of monocytes increases and the polymorphonuclear cells decrease. The red blood cell count is lowered. The hemoglobin usually falls. It has been reported by some investigators that the leukocyte count may be elevated at first. However, when this occurs it is quickly followed by a general lowering of the count. The platelet count is lowered, dropping to practically zero in cases of severe disease. The reticulocyte count is also lowered. The prothrombin time is normal. The red blood cells exhibit anisocytosis, poikilocytosis and polychromatophilia. In all patients showing a decided blood reduction a bone marrow biopsy should be done. The degree of aplasia can be determined, and usually an accurate prognosis can be made. Patients with total aplasia usually die. Patients with partial aplasia have a prognosis dependent on the amount of regeneration present. Results of urinalysis are usually negative. The blood pressure may be lowered.

Aplastic anemia is to be differentiated from granulocytopenia and acute leukemia. The symptoms of all of these diseases are very similar. In granulocytopenia the red blood cell and platelet counts are usually essentially normal. In acute leukemia the white blood cell count may be normal, raised or lowered, with the differential count showing a decided increase in very young white blood cells. The liver and spleen are usually enlarged in acute leukemia and are normal in aplastic anemia and granulocytopenia. Sore throat is common in leukemia and especially so in granulocytopenia. It must be recognized that the differential diagnosis in these three diseases may be difficult. Bone marrow studies usually reveal the proper diagnosis.

In patients with mild benzene intoxication, with or without a change in the blood cell count, the treatment is permanent removal from exposure. These patients will return to normal in a few days with no medication.

In patients in whom absorption is sufficient to cause a decided change in the blood picture more active treatment is necessary. These patients are given absolute bed rest. Multiple small whole blood transfusions (about 250 cc.) are given as often as once daily. When severe reactions occur, blood plasma may be used in place of whole blood.

Direct bone marrow transfusions may be given as often as twice weekly. In this procedure 2 to 5 cc. of bone marrow are removed from the sternum of a compatible donor and introduced directly into the sternum of the patient. From the same donor 250 cc. of blood are drawn and transfused into the patient. This is followed by 1,000 cc. of isotonic sodium chloride solution.

Large daily doses of liver, iron, calcium, phosphorus, yellow bone marrow and multiple vitamins are given. A full diet is prescribed. The patient's general hygiene is improved as much as possible. Bleeding areas are stopped if at all possible. Pentnucleotide* (the sodium salts of the pentose nucleotides from the ribonucleic acid of yeast) has been used and found to be effective in some cases.

The poor resistance in these patients is due to the lowered leukocyte count. Secondary infection, the commonest of which is a Vincent's organism infection of the mouth, is one of the causes of death. For certain types of severe secondary infection, the antibiotics are indicated.

The response to therapy is slow, since a considerable time is necessary for the bone marrow to regenerate. Splenectomy may be considered in some cases of refractory disease. Any treatment at best is not wholly satisfactory. Extreme caution must be observed in the handling of this chemical. In too many patients overexposure proves fatal.

Atmospheric concentrations should not exceed 100 parts per million. Skin contact with benzene should be avoided. Blood cell counts, including hemoglobin, red and white cell, and differential determinations should be made for all exposed persons at least every two months. Sternal bone marrow examinations should be done in suspicious cases. Persons with blood or bone marrow abnormalities should be considered for immediate and permanent transfer away from these solvents. Wherever possible an attempt should be made to substitute less toxic solvents.

CHLORINATED HYDROCARBONS

Probably the most commonly used member of the chlorinated hydrocarbon group is carbon tetrachloride.

The symptoms of overexposure to the chlorinated hydrocarbons usually start with a feeling of drowsiness, which, if exposure continues, is accompanied with anorexia, nausea, vomiting, abdominal pain, diarrhea, headache and dizziness. Jaundice may develop. Oliguria progressing into anuria may also develop. In some the occurrence of bronchitis or bronchial pneumonia has been reported. Some persons present hypertension. A constriction of the visual color fields has also been noted. Polyneuritis has been described. The mode of action is that of a narcotic with direct or indirect effects on the central nervous system. The chlorinated hydrocarbons also act as hepatotoxics, probably causing cirrhosis of the liver. This is especially noted when the diet has been deficient in calcium or there has been a depletion of body protein. The kidneys appear to be primarily involved in acute intoxications, the lesion being described as destruction of the epithelium with the stroma left intact. Hypertension and azotemia may accompany the kidney involvement. Acute exposure to the chlorinated hydrocarbons is usually manifested by narcotic intoxication, with liver and renal damage in six to twenty-four hours. The symptoms of chronic poisoning usually simulate those of portal cirrhosis.

A careful evaluation of the patient should be made, including tests of hepatic function, tests of renal function, electrocardiogram and roentgenogram of the chest. Dextrose should be given intravenously, either in isotonic sodium chloride solution or distilled water. A high carbohydrate–high protein diet with a normal fat content is recommended. Methionine and choline have been reported to be of benefit. The patient should be kept under observation until all signs of hepatic and renal damage have disappeared or have become nonprogressive.

Workers should be carefully selected. Obese and undernourished persons, nephritic and diabetic persons, those with pulmonary and hepatic disease and those having an enlarged thymus or thyroid should be rejected. Frequent physical inspections of exposed persons should be made, particular attention being

paid to renal and hepatic function. Atmospheric concentrations should not exceed 100 parts per million. Skin contact should be avoided.

KETONES

The common ketones used in industry are acetone and methyl ethyl ketone. In my experience no cases of occupational disease have been attributed to the ketones. A narcotic action has been attributed to acetone when given to animals. It is known that when persons are exposed to moderate concentrations of acetone, it may be found in the urine without clinical symptoms being noted. It is wise to suspect that the ketones have a narcotic action and may cause a depression of the body temperature, respirations and heart rate. Exposure to excessive atmospheric concentrations of most of the ketones results in severe optic and respiratory irritation. Treatment is entirely symptomatic.

Personal comfort is the determining factor as to the tolerable atmospheric concentration. Skin contact should be avoided.

The esters commonly used are methyl acetate, ethyl acetate, isopropyl acetate and butyl acetate. Some of the esters have an irritating action on the respiratory passages. They are also irritating to the eyes and may cause slight narcosis. In general the acetates are considered to be among the safest of the solvents. No cases have ever been reported of genuine acetate poisoning. Treatment is entirely symptomatic.

Since these chemicals are not considered severely toxic, in most cases the maximum allowable concentrations are based on comfort requirements. Skin contact may result in dermatitis and should therefore be avoided.

ALCOHOLS

The most toxic of all of the alcohols is methyl alcohol. Methyl alcohol is a source of grave injury to many industrial workers. It has a specific action on the optic nerve, and with long enough exposure blindness may result. The action is that of inflammation of the optic nerve followed by atrophy. A considerable amount of methyl alcohol poisoning was noted during prohibition days when wood alcohol was used in large amounts with subsequent optic nerve degeneration and blindness. The other alcohols, because of their volatility, are not considered to be especially dangerous. Cases of narcotic poisoning have been attributed to them. The higher alcohols, like butyl and amyl, have an irritant action as well as some poisonous action on the protoplasm.

If methyl alcohol is taken internally, the use of an emetic is indicated. Four per cent sodium bicarbonate solution, as a gastric lavage, is excellent. When the toxic action results from absorption through the skin, a lavage is of no benefit. Because acidosis due to the formation in the system of formic acid results, sodium bicarbonate or sodium lactate given orally or intravenously is advisable. This treatment should be continued until the acidosis has been corrected. The patient should be kept warm and symptomatic treatment offered. With the exception of the eyes, most abnormalities from chronic exposure clear up after cessation of exposure. The treatment of exposure to the other alcohols is entirely symptomatic.

As with all solvents, prolonged skin contact should be avoided. This is especially true of methyl alcohol, which can be absorbed through the skin in sufficient quantities to be harmful. Physical examinations of personnel exposed to methyl alcohol should be made at two to three month intervals. This should include an ophthalmologic examination. Atmospheric concentrations of methyl alcohol should not exceed 200 parts per million.

PETROLEUM DISTILLATES

Probably the best known of the petroleum distillates is gasoline. These distillates are narcotics, and it is possible to produce complete anesthesia with heavy doses. However, their anesthetic properties are much less than those of the aromatic and chlorinated hydrocarbons. For this reason they may be more desirable for commercial use.

The susceptibility of human beings varies greatly. Acute poisoning produces the symptoms of a narcotic. There is fulness of the head, headache, blurred vision, dizziness, unsteady gait and nausea. The patient becomes irritable. Burning of the eyes and dimness of vision are common complaints. It is of interest to note that on exposure to air the symptoms become aggravated at first. Massive exposures may cause sudden collapse, coma and death. In fatal cases there is usually some blood vessel damage, with small hemorrhages into the body organs. Bronchitis, pulmonary edema and cellular damage of the kidneys, liver and the spleen have been described. The symptoms of chronic poisoning are usually central nervous system in origin. Epileptiform seizures, unconsciousness, tonic muscular spasms, lancinating pains in the limbs, coldness and numbness in the hands, loss of strength, loss of memory, drowsiness, dimness of vision, confusion and dulness of mentality and tremors have all been described.

Degeneration of the pyramidal tracts has been described. The effect of chronic petroleum distillate poisoning on the blood is a matter of controversy. It is usually felt that the effect of gasoline fumes on the blood differs from that of benzene only in degree. It must also be mentioned that certain petroleum distillates are suspected of containing carcinogenic substances. At the present time considerable research is being performed along this line.

The treatment of acute petroleum distillate poisoning should be directed toward the prevention of respiratory and circulatory collapse. After intense exposures pulmonary edema usually occurs. Oxygen therapy, preferably with a face mask and positive pressure, is indicated. Saturated clothing should be removed. Circulatory and respiratory stimulants may be necessary. Bronchopneumonia may develop. Treatment with the antibiotics may then be necessary. Most of the patients are rather nervous and restless. Sedation may be indicated. Conjunctivitis may be treated by dropping 1:1,000 epinephrine solution into the eyes four times daily, followed by cold applications. Boric acid ophthalmic ointment may also be used. Iron medication should be given if anemia develops.

The maximum allowable concentrations of gasoline have been stated to vary from 100 to 1,000 parts per million. These solvents are not considered to be severely toxic, and in most cases the values are based more on personal comfort than on toxic requirements. Skin contact should be avoided.

CARBON DISULFIDE

Carbon disulfide has long been recognized as an industrial poison. The commonest symptom is neuritis, which may affect any of the nerves and most commonly

involves the nerves of the limbs and certain of the cranial nerves. Both the motor and the sensory nerve fibers are affected, causing abnormal sensations and loss of power. This is an insidious type of poisoning in which permanent damage to the brain may result. The mental symptoms may be exhibited in varying degrees, ranging from simple irritability and depression to manic depressive insanity.

There is no specific treatment for chronic carbon disulfide poisoning. A diet high in vitamin content with an adjunct of vitamin B complex may be of value. Liver extract may be given. It is very important that necessary precautions be taken to avoid overexposure to this compound. Atmospheric concentrations should not exceed 20 parts per million. Skin contact must be avoided. Periodic physical examinations which include a careful examination of neurologic symptoms should be made at monthly intervals on all persons handling the compound. Removal from contact with it is imperative at the first intimation of any unusual symptoms. The drinking of alcoholic beverages by exposed personnel should be discouraged.

THE PNEUMONOCONIOSES

Which Industrial Dusts Are Inert? Which Are Harmful? Why?

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The term pneumonoconiosis has been so loosely applied to industrial pulmonary conditions that some clarification appears to be desirable. It is an all-inclusive caption for a variety of pulmonary affections resulting from the inhalation of inert or harmful dust. Generically it does not imply fibrosis but simply "dust in the lungs." If one is to accept this meaning, therefore, pneumonoconiosis must include any retention of dust in the lungs, whether of industrial origin or not and whether of toxic, irritant, proliferative or inert dust. It must also include the anthracotic pigmentation from dust, carbon and smoke which all normal lungs exhibit; in the interpretation of pathologic change, the matter of degree as well as specificity must be considered.

From a practical standpoint, however, pneumonoconiosis refers mainly to pulmonary alterations attributable to those dusts encountered in industry which can cause proliferative reactions, roentgenologic patterns due to radiopaque properties or simple exaggeration of normal linear markings. These changes are entirely distinct from the action of toxic dusts, such as lead or mercury, for which the lungs act merely as the point of entry into the body. They differ also from the reactions produced by mycotic and other organic dusts, as will be explained.

Industrial dusts are listed by Kronenberg and Morse [1] as follows:

I. Organic Dusts:
  A. Nonliving:
    1. Toxic and/or irritant
  B. Living:
    1. Bacterial
    2. Fungous

II. Inorganic Dusts:
  A. Toxic and/or irritant
  B. Fibrosis-producing
  C. Nonfibrosis-producing

Classification of industrial dusts into "harmful" and "inert" categories is not easy because some which are usually considered innocuous may produce definite pathologic changes under certain conditions, such as prolonged excessive exposure. In the following modification of Sander's [2] grouping, certain dusts are designated as harmful even though they do not produce fibrotic pulmonary alterations.

Organic dusts arise mainly from animal or vegetable materials, but many are synthetic. They do not cause pulmonary fibrosis but are capable of producing local irritation which results in such things as dermatitis, dental lesions, irritation of the mucous membranes and conjunctivitis. Sappington [3] has listed more than one hundred occupations in which these symptoms and/or allergic manifestations may be produced from substances like pollens, horse hair, furs, wool and wood dust.

Byssinosis, an occupational condition resulting from dust encountered in the cotton industry, has been reported in Europe as a definite occupational disease, but its existence as a clinical entity in this country is questionable. Acute symptoms and roentgenologic findings suggestive of pneumonia of the influenzal type have followed exposure to an organic dust produced by crushing or shredding bagasse, a waste product of sugar cane. The condition is described as bagassosis and, like byssinosis, may be due to an allergic reaction rather than to actual pathogenic properties of the dust itself. There is also some recent evidence to show that bagassosis may be caused by a fungus or possibly by bacteria attached to the dust and that the dust itself is relatively innocuous.[4] C. F. Long [5] investigated more than 1,247 workers in the tobacco industry and concluded that tabacosis does not develop in the lungs of those who inhale tobacco dust. Recent studies, however, by McCormick, Smith and Marsh [6] indicated that there may be a significant free silica hazard in the stemming and redrying operations in that industry.

Pulmonary diseases caused by fungous infections have been receiving more attention in recent years. Increasing recognition of these cases has led many observers to believe that they may be more prevalent than is generally supposed. Mycotic diseases are usually nonindustrial and are found only in certain geographic locations. Nevertheless some cases have been attributed to occupational exposure. In 1945 Coe [7] reported a case of bronchopulmonary aspergillosis, occurring in an employee of the Chicago Stock Yards, for which an award of compensation was granted and upheld by the Industrial Commission of Illinois.

Fungi are filamentous plants of simple structure, among them being various yeasts and molds. They may attack the lungs or other parts of the body and

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1. Kronenberg, M., and Morse, K. M.: Health Hazards of Occupational Environment, Circular 154, Springfield, Ill., Illinois State Department of Health.

2. Sander, O. A.: The Pneumoconioses, personal communication to the author, Nov. 14, 1944.

3. Sappington, C. O.: Essentials of Industrial Health, Philadelphia, J. B. Lippincott Company, 1943, pp. 186-187.

4. Gerati, B.; Tager, M., and Marinaro, N. A.: Pathogenicity of Bagasse, Arch. Path. **44**: 343-349 (Oct.) 1947.

5. Long, C. F.: Tobacco Dust and the Human Lung, Industr. Med. **8**: 365-369 (Sept.) 1939.

6. McCormick, W. E.; Smith, M., and Marsh, S. P.: Health Hazards of the Tobacco Stemming and Redrying Industry, J. Indust. Hyg. & Toxicol. **30**: 43-51 (Jan.) 1948.

7. Coe, G. C.: Primary Bronchopulmonary Aspergillosis, an Occupational Disease, Ann. Int. Med. **23**: 423-425 (Sept.) 1945.

give rise to such conditions as moniliasis, aspergillosis, sporotrichosis and coccidioidomycosis. It is important for one to bear this fact in mind, particularly when reviewing the industrial roentgenogram of the chest. The pulmonary shadows produced by yeasts and molds may easily be confused with those caused by free silica unless careful consideration is given to the patient's occupational history and exposure to dust.

In recent years considerable research has been done on multiple pulmonary calcification. This condition has been commonly observed in roentgenograms of the chest of persons living in the south, central and eastern states. It has been described under such names as miliary calcification, calcicosis and "wheatena." The origin of the small, widely scattered, sharply defined calcified nodules was obscure until a short time ago, but it now seems reasonably certain that they are caused by the fungus Histoplasma capsulatum. Histoplasmosis has usually been considered a fatal disease, but it now appears that there may be a benign form which is asymptomatic, nondisabling and evident only by the characteristic roentgenologic appearance. It is not clinically significant, and there should be no difficulty in distinguishing the condition from silicosis or other occupational diseases manifested roentgenologically.

Certain of the inorganic dusts are primarily irritant, and their consequence is local inflammation of the upper respiratory tract. They are not proliferative but if inhaled in sufficient amounts may produce general poisoning. These include such substances as chromium and its compounds, cadmium and arsenic. While it is recognized that the great majority of industrial dusts are inert, as far as causing disabling fibrosis is concerned, one should not forget that certain other substances can produce dust or fumes which may cause serious illness. These are the heavy metals, such as lead, mercury and manganese. As pointed out earlier, dust or fumes from them do not cause structural lung changes but merely use the lungs as a portal of entry into the body. In later years serious toxic effects have been attributed to beryllium and its compounds and to fumes arising from the fusing of bauxite in the manufacture of artificial abrasives. These two conditions have resulted in severe pneumonitis with definite roentgenologic findings and some fatalities. The exact etiology has not yet been determined in either, and it is questionable whether they should be classified as pneumonoconioses until their status has been more accurately demonstrated.

When inhaled over long periods of time certain dusts may produce shadows in the roentgenogram which closely resemble those of silicosis, so that one should resist the temptation to make a diagnosis of occupational disease on the roentgenologic factor alone. Some physicians have had the embarrassing experience of making a "long distance" diagnosis solely from the roentgenogram, only to find out later that the person concerned had worked in an office all his life without ever having been subjected to dangerous dust. Even when the roentgenologic evidence is associated with a history of employment in a dusty industry, care should be exercised by the examiner to make sure that the occupation offers adequate exposure to dangerous-sized particles of material capable of causing actual damage to pulmonary tissue. It is still a common practice among physicians and roentgenologists who have insuf-

TABLE 1.—*Industrial Dusts*

Harmful or Potentially Harmful		Inert	
Substance	Type of Effect	Substance	Type of Effect
I. Organic			
A. Animal	Allergic		
Dander			
Fur			
Hair,			
Etc.			
B. Vegetable	Allergic or infectious pneumonitis		
Pollens			
Grains			
Cotton (byssinosis)			
Sugar cane (bagassosis)			
Tobacco (tabacosis)			
C. Bacteriae			
D. Fungus			
Aspergillosis			
Coccidioidomycosis	Irritant		
Blastomycosis	Fibrogenic		
Sporotrichosis	Allergic		
Geotrichosis	(Occasionally occupational)		
Moniliasis			
Histoplasmosis			
II. Inorganic			
A. Metallic			
Chrome and its compounds	Irritant, causing local irritation of upper respiratory tract	Carbon (Anthracosis)	Roentgenologic changes only
		Calcium (Calcicosis)	
		Iron (Siderosis)	
		Barium (Baritosis)	
Cadmium		Tin (Stannosis)	
Arsenic	May be toxic	Aluminum	
Lead	Absorption and intoxication	"Carborundum" (silicon carbide)*	
Manganeses		Emery †	
Mercury		Aluminum oxide	
Zinc			
Beryllium	Pneumonitis		
Bauxite	Chronic granulomatosis (exact etiology undetermined)		
B. Free Silica (silicon dioxide)			
C. Silicates			
Asbestos (Only silicate thought capable of producing fibrosis)	Asbestosis	Talc, mica, soapstone, feldspar, etc.	(Few cases reported; e. g., talc "pneumonoconiosis," probably due to quartz impurities)
		Talc	
		Mica	
		Soapstone	
		Feldspar	
		Etc.	

* Carborundum does not exist in nature but is a manufactured product fused from sand, coke and sawdust.
† Emery is an aluminum oxide manufactured from bauxite. Corundum is natural aluminum oxide.

ficient knowledge of industrial environments or modern hygienic practices to arrive at premature and inaccurate conclusions simply because they have based their interpretations on too little information. Unfortunately they sometimes express very dogmatic opinions without stopping to consider the effect on the employer or the worker himself.

The distressing features of this conduct are that employees become needlessly alarmed, forsake their lifetime vocations, suffer financial loss and forfeit seniority. Industry is deprived of the services of skilled workmen, confronts lowered production and faces unjust and costly litigation—all because of unwarranted roentgenologic interpretation and unfamiliarity of the examiner with progressive industrial medicine and hygiene.

The number of unrelated conditions capable of producing roentgenographic shadows in the lungs simulating silicosis is constantly increasing. In 1946 I listed some 23 of these, which ranged all the way from certain cardiac afflictions to exaggerated linear markings representing pulmonary vascular changes due to advancing age.

Gardner [8] and others have demonstrated that silicosis is likely to develop only when significant concentrations of respirable-sized particles (those smaller than 10 microns, and especially those smaller than 3 microns) of free or uncombined silica have been inhaled over long periods of time (2 to 25 years, with an average of 10 years). This fact emphasizes the need for careful appraisal of injurious contamination by dust in the actual working places and correlation of this appraisal with the occupational history, clinical and roentgenologic findings when one is evaluating any case of suspected occupational fibrosis. The most important consideration in any such investigation is, "How is the man himself affected?" Although the amount of visible dust in the atmosphere around a specific job appears to be great, that fact does not necessarily mean that pathologic quantities of the particles are reaching the alveoli of the lungs. Accumulations at the breathing level and the defensive mechanism of the upper respiratory tract must be taken into account along with the length and constancy of exposure.

The absence of pathologic change in the presence of the inert dusts may be explained in part by several factors. The natural barrier to dust provided by the anatomic arrangement of the upper respiratory tract, the ciliated epithelium of the mucous membrane lining the bronchi down to the terminal bronchioles, and the phagocytic cells in the alveoli all serve to eliminate inhaled dust. When one considers a pulmonary ventilation rate of some 18 cubic feet per hour, which may increase from 50 to 80 cubic feet per hour on exertion, it is not difficult to see how well this defensive mechanism of the body works. The long period required for the development of recognizable silicosis, even under heavy exposure, attests the efficiency of the arrangement.

The size of the particles of the offending dust is also an important consideration. To be inhaled, dust must be air borne and also must be small enough to reach the alveoli. The diameter of an alveolus is approximately 250 microns, but, as pointed out previously, experience has demonstrated that very few particles of more than 10 microns in size ever reach them, certainly not enough to produce damage. And, as was also stated before, the inert dusts do not appear to have a chemical reaction on lung tissue, such as silica does. This factor is perhaps one of the most important reasons why these dusts do not cause fibrosis.

It may be said that up to the present time only free silica and asbestos have been believed capable of causing definite pulmonary fibrosis, and the reaction in each instance is quite different. Most of the other pneumonoconioses exhibit a characteristic tissue response. According to Gardner [9] the roentgenographic appearance in these cases consists of a mere accentuation of the normal, branching, treelike shadows, cast chiefly by the blood vessels. It represents a simple linear fibrosis and is difficult to distinguish from the mild accentuation of linear markings sometimes seen in roentgenograms of

TABLE 2.—*Classification of Pulmonary Conditions, Roentgenograms of Which Simulate Those of Silicosis*

A. From Industrial Dusts
  I. Organic
    (a) Byssinosis
    (b) Bagassosis
    (c) Tabacosis
  II. Inorganic
    (Inert)
    (a) Anthracosis
    (b) Radiopaque Deposits
      Barium (Baritosis)
      Iron (Siderosis)
      Tin
    (Toxic)
    (c) Reaction to Beryllium
    (Proliferative)
    (d) Asbestosis
B. From Nonindustrial Dusts
  I. Mycotic
    (Yeasts and Molds)
    (a) Aspergillosis
    (b) Monliasis
    (c) Wood dust spore infection
    (d) Coccidioidomycosis
    (e) Blastomycosis
    (f) Actinomycosis
  II. Miscellaneous
    (a) Miliary tuberculosis
    (b) Sarcoidosis
    (c) Mitral Stenosis
    (d) Cancers (metastases)
    (e) Vascular changes
    (f) Miliary calcicosis ("wheatena")
    (g) Erythremia
    (h) Bronchiolitis

persons with no known history of exposure to dust. He designated this effect as "benign nonspecific pneumonoconiosis," and it includes every known reaction to mineral dust except that to soluble poisons, such as lead; the specific diseases silicosis and asbestosis, and certain "roentgenologic conditions," such as baritosis, stannosis and the pseudonodulation of arc welders. Numerous observers have pointed out that deposition of inert iron oxide into the lungs from occupations like welding, burning, polishing and grinding has resulted in pigmentation of the pulmonary tissue, which gives rise to discrete nodular shadows closely resembling those produced by free silica. Postmortem examinations of several patients with these signs have shown no evidence of the typical nodular fibrosis of silicosis.

For the past two and a half years, because of roentgenologic findings suggestive of silicosis in the roentgenograms of the chest of some burners and grinders, my associates and I have been conducting

8. Gardner, L. U.: Pathology of Silicosis, in Kuechle, B. E.: Second Symposium on Silicosis, Wausau, Wis., Employers Mutuals, 1935.

9. Gardner, L. U.: The Pathology and Roentgenographic Manifestations of Pneumoconiosis, J. A. M. A. **114**: 535-545 (Feb. 17) 1940.

experimental work at the Saranac Laboratory, in which studies animals have been exposed to representative concentrations of air-borne dust from grinding operations. Analysis of this dust shows relatively low amounts of free silica but very high quantities of iron oxide particles. Animals killed thus far demonstrate no pulmonary reaction except that comparable to reactions from other inert dusts. The work is continuing, and results will be published when sufficieint time has elapsed to produce valid conclusions. Other inert dusts, like those derived from tin and barium, are capable of causing changes in the roentgenologic pattern which, although very evident in the film, are nondisabling and do not result in fibrosis. They are very important, however, from the standpoint of diagnosis.

It has long been recognized that silica, or silicon dioxide (SiO_2), which makes up 60 per cent of the rocks and minerals of the earth's crust, is the specific cause of silicosis. It exists either in the free state or in combination with certain mineral oxides to form silicates, such as mica, clay and feldspar. Thus far only free silica is known to produce silicotic fibrosis of the lungs. The term free silica usually means quartz, of which there are many varieties. There are other forms of free silica, as shown in table 3.

TABLE 3.—*Forms of Free Silica, Causing Silicosis, Classic and Modified*

Crystalline (Crystalline structure)
Crystobalite
Tridymite
* Quartz
Cryptocrystalline (Crystal structure too fine to be easily distinguished)
Chalcedony
* Flint
* Chert
Jasper
* Tripoli
Amorphous (Noncrystalline)
* Diatomite
* Silica Gel
* Vitreous Silica
Opal

* The compounds marked with an asterisk are those of the greatest industrial importance.

It has not been demonstrated authentically that silicates other than asbestos produce real pulmonary fibrosis. Pulmonary changes due to dusts containing them have been reported, but they probably resulted from small amounts of free silica, which existed as impurities. However, more investigation is necessary before one can make definite assertions about the innocuous character of these silicates.

Industrial pulmonary disease offers a real challenge to the general practitioner as well as the industrial physician. As the family doctor he may be called on to express his opinion as to whether changes observed in the roentgenogram of the chest are caused by occupation or not. Even though he is not directly associated with industry, most manufacturing concerns will welcome his interest and be more than willing to afford an opportunity for visits to the plant so that he can obtain first hand knowledge of actual working conditions. Through such contacts he will find that his appraisal of industrial diseases will be greatly enhanced, and the experience will prove to be fascinating and surprisingly valuable.

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MANAGEMENT OF COMMON OCCUPATIONAL SKIN DISEASES

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The general practitioner in considering any patient with a cutaneous disorder of possible occupational nature has many problems to consider. In the first place there is the patient who generally comes to the physician as a private patient, i. e., not having been sent by either the employer or the insurance company. In such a case both the physician and the patient are primarily concerned with the problem of relief, i. e., that of treatment. This will be considered later. In addition to the relief of the patient, the physician should act (1) to prevent as far as possible aggravation or recurrence of the eruption, (2) to hold to a minimum the amount of time lost from work because of the cutaneous condition and (3) to prevent or minimize the occurrence of similar eruptions in other employees who may be similarly exposed.

In the second place there is the employer to be considered. He is not particularly interested in the medical problem except from its economic aspects. Nevertheless, the physician's relations with him should be harmonious because many times the employer will be called on to furnish information and technical data which may be absolutely essential to an intelligent handling of the patient's cutaneous condition.

Finally, there is the medicolegal aspect of the insurance carrier and industrial compensation. The insurance company must be furnished with a correct and etiologic diagnosis if this is at all possible. Such a diagnosis must be established on a scientific basis by a carefully taken history, by the dermatologic observations in any given case and occasionally, but not always, by patch tests. Reasonably accurate information should be furnished as to the temporary and permanent disability, the length of treatment, prognosis as to recurrences and the ability of the patient to resume his regular or ordinary duties.

The physician should be familiar with the compensation laws of the state in which he practices. In most states having such laws the patient is not compensated for the first week's absence from his work. Hence the physician who knows this will not be too quick to advise the worker to stay away from his job unless, of course, it is absolutely necessary. Another point, not generally understood, is that even if the patient's industrially caused eruption has been greatly aggravated by self-applied medication, nevertheless the condition remains compensable.

The importance of occupational dermatitis is revealed by the fact that it accounts for 65 per cent of all occupational disease exclusive of accidents in this country. Further, about 1 per cent of all workers will at some time suffer from an occupational dermatitis, and, finally, the average patient loses ten weeks from work.[1]

"An occupational dermatitis is a pathological condition of the skin for which occupational exposure can

This paper and the two preceding papers complete the symposium of seven papers on Industrial Medicine read at the annual meeting of the American Medical Association in Chicago, June 23, 1948. The papers by Dr. Leonard Greenburg, Dr. Elston L. Belknap, Dr. William C. Wilentz and Dr. John H. Foulger were published in THE JOURNAL last week.

Read in a Joint Meeting of the Section on General Practice and the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 23, 1948.

1. Schwartz, L.: The Incidence of Occupational Dermatoses and Their Causes in the Basic Industries, J. A. M. A. **111**: 1523 (Oct. 22) 1938.

be shown to be the major causal or contributory factor." [2] The Committee on Industrial Dermatoses which formulated this definition also outlined in somewhat technical language the criteria for the diagnosis of occupational dermatitis.

Not only should these criteria be kept in mind, but they should also be in front of the physician when he takes the history. Such a history is the single most important aid in the correct diagnosis and management of any occupational dermatosis.

The following questions which adequately cover the same criteria from a slightly different angle have been formulated by Lane.[3]

1. Is the site of greatest exposure the site involved at the onset?
2. Is the site of the greatest skin involvement the site of maximum exposure?
3. Have other fellow workers suffered from similar eruptions?
4. Does the suspected causative agent produce eruptions of this type?
5. Is the occupation one in which similar cases have been observed?
6. Is the time relationship between exposure and onset of the eruption correct?
7. Is there any history of outside exposure to other irritants, e. g., as in gardening, hobbies, wearing apparel and cosmetics?
8. Are the cutaneous lesions present consistent with those known to have followed a similar exposure?
9. Is there a definite history of (*a*) the cutaneous eruption occurring after exposure to a suspected agent, (*b*) improvement and clearing of the eruption after cessation of work or transfer to another job where the suspected agent is no longer contacted and (*c*) relapsing of the cutaneous condition shortly after a return to the conditions of original exposure?
10. Are you sure of your diagnosis (patch tests)?

Essentially the same information is elicited in the special forms devised by Hall [4] and by Peck.[5] These can be used in place of the ordinary insurance blanks.

As emphasized by Lane,[3] it must be noted that these criteria do not apply in cases in which (1) considerable time has elapsed between the onset of the eruption and consultation with a physician, (2) the eruption has resulted from overtreatment with too strong medication, (3) the eruption has resulted from the improper or injudicious use of sensitizing medications and (4) there is an aggravation of a preexisting cutaneous disease by industrial contact or exposure.

INDUSTRIES IN WHICH OCCUPATIONAL DERMATITIS IS A PROBLEM

Schwartz [6] has listed the industries in which occupational dermatoses are most prevalent, with the incidence in each (percentage):

Synthetic resin manufacture	7.5
Chemicals and dye manufacture	7.0
Tanneries	3.5
Oil refining	3.3
Candy manufacture	3.0
Fabric dyeing	2.0
Rayon manufacture	2.0
Steel manufacture	1.5
Fur dyeing	1.0
Rubber manufacture	1.0
Glass manufacture	1.0
Automobile manufacture	0.4

However, occupational dermatitis occurs in considerable numbers in persons in the food-handling trades, including housewives and domestic help. In fact, there is practically no industry, occupation, trade or profession in which occupational cutaneous disease is not at times a problem.

PHYSICAL EXAMINATION

The importance of conducting a physical examination of the entire body, including the scalp, feet and oral mucosa, should be noted. In case the eruption is caused by nonindustrial factors, this fact will often be detected by such an examination. In some cases an industrial cause of the eruption will be suspected but there will not appear to be sufficient contact with the offending agent to explain the various sites which are involved. In such cases close questioning of the worker will often explain the localization of the eruption to such sites.

PATCH TESTS

The patch test has been widely publicized almost to the point where, to paraphrase the common saying "he could not see the woods because of the trees," it has become impossible to see an industrial dermatosis because of patch tests. Nevertheless, the technic of the patch test, with its modifications and variations, the indications for patch tests and the value, limitations, dangers, interpretation and medical legal complications have been thoroughly and critically discussed by numerous dermatologists.[7] Patch tests are exceedingly valuable in certain cases, but they must not and need not be used in that great group of occupational dermatoses due to primary irritants. If patch tests are indicated, control studies should be done on the physician or his nurse. This point has not been stressed sufficiently.

Only about one third of the dermatoses occurring in industrial workers will prove to be of occupational origin. It will be comforting to the general practitioner to realize that in about 10 per cent of definite occupational dermatoses an exact etiologic diagnosis may be impossible.

INFECTIOUS ECZEMATOID DERMATITIS

One of the commonest cutaneous conditions occurring in association with occupational injuries is known as infectious eczematoid dermatitis. This condition may develop as a direct complication in a cut, scratch, abrasion, friction burn or other superficial injury of the skin. It is prone to develop in the region of wounds that have been neglected or improperly treated or in the neighborhood of pyogenic infections, such as a furuncle, otitis media or a draining sinus such as may develop following a compound fracture or osteomyelitis. Many times the history of an injury will not be obtained unless the patient is specifically questioned regarding such an injury.

In one group of cases it is the direct result of bacterial sensitization of the skin in the neighborhood of a wound. In the other group of cases it follows the chemical sensitization of the skin by such agents as the mercurials, iodine or sulfonamide drugs. Granulating wounds, such as burns with secondary infection, are especially apt to become sensitized. As pointed out by Sneddon,[8] in such cases the epithelial cells are subjected to closer contact from such external agents than occurs with intact skin. He further noted that the

2. Lane, C. G., and others: Industrial Dermatoses: Report by Committee on Industrial Dermatoses of Section on Dermatology and Syphilology of the American Medical Association, J. A. M. A. **118**: 613 (Feb. 21) 1942.
3. Lane, C. G.: Course on Industrial Dermatoses, American Academy of Dermatology and Syphilology, Chicago, Dec. 9, 1947.
4. Hall, A. F.: Personal communication to the author.
5. Peck, S. M.: Course on Industrial Dermatoses, American Academy of Dermatology and Syphilology, Chicago, Dec. 9, 1947. Reporting Industrial Dermatitis: Proposing New Form to Properly Evaluate Case, Compensation Med. **1**: 3 (March) 1946.
6. Schwartz, L.; Tulipan, L., and Peck, S. M.: Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1947, p. 28.
7. Ingraham, N. R., Jr., and Beerman, H.: Some Problems in Dermatologic Allergy, M. Clin. North America **31**: 1518 (Nov.) 1947. Downing, J. G.: Legal Aspects of Patch Tests, Arch. Dermat. & Syph. **44**: 63 (July) 1941. Friedman, R.: Patch Test: Its Use and Abuse, Pennsylvania M. J. **51**: 629 (March) 1948.
8. Sneddon, I.B.: Some Dermatologic Complications of Open Wounds, Proc. Roy. Soc. Med. **40**: 883 (Dec.) 1947.

site of the wound was also very important. In localities with deficient blood supply there is less resistance or poorer nutrition of the cells and the healing time is prolonged. Both of these factors favor the development of sensitization and especially so when in addition a chemical agent is applied which possesses decided sensitizing powers. Once the process has started it seems to possess the power of self perpetuation and is definitely autoinoculable, e. g., in scratch marks or at sites of microscopic trauma such as occurs from adhesive tape.

The resulting cutaneous picture shows one or more sharply outlined patches, which are often coin sized or larger. These patches are composed of superficial papulovesicules or pustules. These easily rupture and produce a moist raw oozing edematous patch which, because of its annular appearance, is often mistakenly diagnosed as a ringworm or fungous infection. New vesicles and pustules develop peripherally or at a distance, and these patches may combine to form larger areas of dermatitis with a profuse thin serous or seropurulent discharge. Single or grouped crusted or oozing vesicles frequently develop in the neighborhood. Later the lesions may become dry and scaly, but most frequently they remain covered with a dry granular varnish-like exudate which cracks or splits, allowing the exudation of serum. There occur repeated exacerbations and remissions, although subjective symptoms are relatively absent or mild. The condition is exceedingly resistant to therapy.

Cultural studies are negative for fungi, but staphlyococci and/or streptococci are usually isolated on ordinary culture mediums. It should be noted that the dermatitis which is seen following exposure to the chromates in the airplane industry may simulate infectious eczematoid dermatitis both in its morphologic aspects and patchy distribution. This was first pointed out by Hall.[9]

TREATMENT

What Not to Use.—In dealing with an industrial dermatosis, it is probably more important to know what not to use than to know any one particular remedy. Many minor industrial or occupational dermatoses are converted into major ones by either sensitizing or irritating local applications or remedies. Thus one sees irritation and sensitization from such applications as the mercurials. These include ammoniated mercury, tincture of merthiolate, tincture of metaphen and certain proprietary disinfectants or sterilizing solutions. As a matter of fact, most of these so-called mercurial antiseptics, at least when in aqueous solution, are valueless for their supposed antibacterial action, as has been shown recently.[10] One must not forget that tannic acid ointment contains 1 : 5,000 merthiolate as a preservative.

Experiences with the local use of the sulfonamide drugs in the past decade certainly have demonstrated the fact that these drugs, particularly sulfathiazole, are potent sensitizers.[11] They have no place in the routine treatment of cuts, abrasions, infected wounds or burns or pyogenic infections of the skin.[12]

The experiences of most dermatologists with the local use of penicillin have revealed that this antibiotic is a potent sensitizer. It may either cause a severe sensitization dermatitis or aggravate an existing condition without producing a definite dermatitis.[13] What, however, is more important with regard to both penicillin and the sulfonamide drugs is the fact that such locally produced sensitivity frequently leads to a generalized sensitivity. This may be of such a high degree as later to prevent the internal use of these valuable therapeutic agents.

The use of butesin picrate ointment for the relief of burns should be mentioned. There are two potent sensitizing agents combined, the local anesthetic butyn and the picric acid radical. All local anesthetics, including dibucaine hydrochloride (nupercaine hydrochloride®), ethyl aminobenzoate, tetracaine hydrochloride (pontocaine hydrochloride®) and metycaine hydrochloride® (racemic-3-benzoxy-1-[2-methylpiperidino]-propane hydrochloride), are decided sensitizers, and their use, particularly on wounds and open granulating surfaces, is fraught with far greater danger to the patient than any temporary benefit derived from their local anesthetic effect, which at the best is very fleeting.

Acriflavine and proflavine of the acridine dye group are also so-called first aid drugs, the use of which could be easily dispensed with. Actually acriflavine may touch off a dermitis due to sulfonamide drugs.[14] A combination of proflavine and sulfonamide mixtures is more damaging to tissues than either substance alone.[8]

In addition to these sensitizing agents, it is a good general rule to avoid the use of ointments containing phenol, resorcinol and nitrofurazone. In general, dermatologists agree with Lyons [15] when he says that local chemotherapy of wounds is unnecessary and undesirable.

In this connection I am sure that sensitivity to adhesive tape is commoner than the literature would indicate. Adhesive tape should be used sparingly, if at all, on the skin of persons suffering from (1) polyvalent sensitivities and (2) infectious eczematoid dermatitis or so-called nummular eczema. In the former it is apt to provoke a nonspecific flare, and in the latter condition new patches of nummular eczema are prone to occur in nearby areas of skin which have been irritated by adhesive.

Dyes and Paints: The custom of using various pigments and paints is probably a "hold over" from the ancient days of the "medicine man" and the "witch doctor." The more vivid, violent and striking the hue and color, the more the patient is impressed. The "medicine man," however, had the advantage that most of his pigments were of vegetable origin. In modern times the fashion has been to use iodine, merbromin, merthiolate,* nitromersol, methylrosaniline chloride, bismuth violet® (contains 4 per cent bismuth ammonium citrate and 96 per cent crystal violet), carbolfuchsin, picric acid, brilliant green and similar preparations of variegated colors. In general most of these are organic dyes which, if they do not cause a secondary contact dermatitis, at least succeed in masking the clinical picture. In general if one feels that the patient must have that "new look," then less trouble and more benefit will be obtained by the use of aqueous methylrosaniline chloride in a 1 or 2 per cent solution. Rarely has the use of methylrosaniline chloride been followed by the development of permanent discoloration of the skin, which is of the nature of a "traumatic tattoo."[16]

9. Hall, A. F.: Occupational Contact Dermatitis Among Aircraft Workers, J. A. M. A. **125**: 179 (May 20) 1944.
10. Morton, H. E.; North, L. L., Jr., and Engley, F. B., Jr.: The Bacteriostatic and Bactericidal Actions of Some Mercurial Compounds on Hemolytic Streptococci, J. A. M. A. **136**: 37 (Jan. 3) 1948.
11. Pillsbury, D. M.: The Management of Bacterial Infections of the Skin, J. A. M. A. **132**: 692 (Nov. 23) 1946.
12. Sulfonamides for Local Application Deleted from N. N. R., Report of the Council on Pharmacy and Chemistry, J. A. M. A. **135**: 157 (Sept. 27) 1947.
13. Wright, C. S., and Gross, E. R.: Topical Treatment with Penicillin Ointment, Arch. Dermat. & Syph. **55**: 52 (Jan.) 1947.
14. Beare, J. M.: Generalized Skin Sensitivity Following Local Application of Acriflavine, Lancet **1**: 410 (March 29) 1947.
15. Lyons, C.: Chemotherapy in the Management of Wounds, J. A. M. A. **133**: 215 (Jan. 25) 1947.
16. Sutton, R. L., Jr.: Gentian Violet as a Therapeutic Agent With Notes on a Case of Gentian Violet Tattoo, J. A. M. A. **110**: 1733 (May 21) 1938.

ULTRAVIOLET RAYS

Many physicians employ ultraviolet rays in the management of dermatoses of an undeniable occupational nature. Without commenting on its value, I should like to state that, if one must use ultraviolet rays, many complications and untoward effects may be avoided by always employing suberythema doses.

COOPERATION WITH PLANT ENGINEER AND PERSONNEL DEPARTMENTS

The plant or safety engineer can frequently be of great help in the placing of adequate exhaust systems in situations where noxious dusts or fumes are a factor, as in electroplating, or in the modification of certain industrial processes, such as the addition of gelatin to sulfate baths when the latter are used as a substitute for cyanide baths.[17] In some chromium plating operatons it is estimated that from five to ten times the amount of chromium converted into chromium plate was lost in the spray or mist over and about the plating tank. The use of a floating or surface application of plastic chips has reduced the concentration of chromic acid in the air by one hundred fold.[18] In small plants without a safety engineer, such a service can be secured from the insurance carrier.

There is no doubt that in industries with a high incidence of occupational dermatitis, a carefully taken preemployment history and examination would do a great deal from a preventive point of view.

PROPHYLACTIC

The use of impervious gloves, gauntlets, masks and other protective garments has been adequately stressed by Schwartz. In any special problem of protection the tremendous wealth of experience and knowledge of the Dermatoses Investigation of the United States Public Health Service, under the supervision of Dr. Paul C. Campbell Jr., is open to all simply for the asking. Dermatologists frequently take advantage of the special knowledge which this agency possesses. There is no reason why the general practitioner should be hesitant in asking for aid in any special problem.

The use of mild soaps, detergents and cleansing agents will do much to eliminate a prolific source of cutaneous irritation. On the other hand, the use of harsh gritty soaps and cleansing agents or turpentine, paint thinners and degreasing solutions should be condemned.

In instances where industrial dermatitis reaches epidemic proportions the plant should be visited personally by the physician along with the safety engineer. Usually in such instances there are two chief factors. First, the workers are in excessive contact with definite irritating or sensitizing materials. Secondly, the washroom facilities are generally inadequate, with no hot water, soap or towels. If the doctor fails to secure adequate washing facilities, either the insurance carrier or the labor union may secure appropriate action.

Protective creams, lotions, films or greases undoubtedly have some value. There are a great many of them on the market, and certain of them may be of value in certain occupations. In general, however, ordinary wool fat is about the best as an all-purpose protection cream. In fact, as so aptly stated by Schwartz, " . . . the chief value of a protective cream is that it practically forces the worker to wash it off."

17. Skin Irritations from Cyanide in Cadmium Plating, Queries and Minor Notes, J. A. M. A. **130**: 313 (Feb. 2) 1946.
18. Molos, J. E.: Use of Plastic Chips in the Controls of Chromic Acid Mist, Indust. Med. **16**: 404 (Aug.) 1947.

ACTIVE TREATMENT

It is practical in cases of acute and more or less generalized dermatitis, in which there is often involvement of the face and neck, ears, eyelids, genitalia, hands, forearms and feet, for the physician to warn the patient that his eruption is "going to get worse before it gets better." All doctors have seen examples of this in the early stages of poison ivy or poison oak dermatitis. In so warning the patient one convinces him that one knows what the course of his eruption will be and so retains his confidence.

All experienced dermatologists will agree that most cases of industrial or occupational dermatitis are overtreated, sometimes by the physicians, but more often by the patient in the use of proprietary remedies advocated by some well meaning friend or druggist. The solution is obvious. In acute dermatoses, regardless of the cause, the physician will do well to confine his local topical remedies to those which are soothing or at least innocuous. To paraphrase a statement by Crawford, occupational cutaneous diseases, like people, respond best if treated gently.[19] These remedies are in general solutions rather than salves or ointments, and as representative examples the following solutions suitable for wet dressings may be mentioned. In fact, on a violently red moist weeping oozing skin, nothing else should be applied.

(*a*) Aluminum acetate solution (Burrow's solution) diluted with 12 to 16 parts of water
(*b*) Plain milk (cold) 4 parts, lime water 1 part
(*c*) Boric acid, 2 to 4 per cent (warning: take care, do not use over extensive areas either in solution or ointment form)
(*d*) Magnesium sulfate (saturated)
(*e*) Sodium chloride solution, 0.9 per cent
(*f*) Starch solutions (boiled)
(*g*) Weak sodium bicarbonate (baking soda) solutions

In general wet dressings should not be used on over one third of the body surface. They should be changed frequently, i. e., every two to three hours, so that the strength of the solution is not increased by evaporation. The use of an impermeable covering, such as wax paper or oiled silk, is optional.

In subacute and chronic stages, when there is dryness, scaling, thickening and fissuring, various ointments and oily preparations are indicated.

These include such preparations as "1-2-3" ointment modified as follows:

Liq. aluminum acetate	5.0
Distilled water	5.0
Wool fat	20.0
Lassars' paste *	30.0

* Lassars' paste is composed of starch 7.5, zinc oxide 7.5 and white petrolatum 15.0.

For extensive areas and in warm weather oily shake lotions are to be preferred.

Ormsby's bismuth cream lotion:	
Bismuth subnitrate	4.0
Zinc oxide	8.0
Olive oil and lime water—equal parts to make	240.0
Apply locally several times daily.	
Rosen's emulsion burrowl:	
Wool fat anhydrous	30.0
Olive oil (pure)	120.0
Heat in mortar and mix well	
Add zinc oxide	30.0
Talc	30.0
and mix well	
Add aluminum acetate solution (1, 2 or 3%)	3.0 to 9.0
and mix well	
Add lime water (fresh) to make	300.0
Apply locally several times daily.	

19. Crawford, S., in discussion on Cohen, M. H.: Mistreatment of Common Skin Diseases, Pennsylvania M. J. **51**: 870 (May)) 1948.

TREATMENT OF SECONDARY PYODERMAS

In instances where secondary infection is present, the following preparation (alibour water) may be used as continuous wet compresses. This is very useful, effective and practically without any danger of causing a sensitization dermatitis.

Copper sulfate	1.6
Zinc sulfate	5.6
Saturated camphor water to make	240.0

Dilute 2 tablespoonfuls to a glass of tap water and apply as a continuous moist dressing.

This preparation may be used anywhere on the body, including the eyelids and genitalia. The mild green discoloration which is deposited on the skin is a valuable index or guide as to whether the patient is actually using the solution.

Another useful wet dressing in treating secondary pyogenic infections is 0.25 to 0.5 per cent aqueous solution of silver nitrate. The black stains which result are somewhat disfiguring, although only temporary, but do make one hesitate to use this preparation on exposed surfaces.

The staining qualities of potassium permanganate in 1:5,000 or 1:10,000 aqueous solution are such that many dermatologists do not use this otherwise valuable remedy.

Tyrothricin [20] is one antibiotic the local use of which has not resulted in sensitization dermatitis. It is applied either in the form of wet compresses in a strength of 0.25 to 0.5 per cent or in a vehicle favoring penetration, as in intraderm® tyrothricin solution (solution containing 0.1 per cent tyrothricin [gramicidin fraction not less than 20 per cent] in a vehicle of water 89 per cent, propylene glycol 10 per cent and an alkyl aryl sodium sulfate 1 per cent).[21]

Bacitracin, also a newer antibiotic, has been used locally in the treatment of the pyodermas with encouraging results, and so far there have been very few reports of sensitization following its use.[22]

SUMMARY

Some general aspects of occupational skin diseases are considered. An outline of simple and effective treatment for occupational dermatoses and some of its complications is presented.

2007 Wilshire Boulevard.

PANEL DISCUSSION

ON PAPERS BY DRS. LEONARD GREENBURG, ELSTON L. BELKNAP, WILLIAM C. WILENTZ, JOHN H. FOULGER, REX H. WILSON, L. E. HAMLIN AND NELSON P. ANDERSON

DR. L. T. FAIRHALL, Milwaukee: For several years the diagnosis of lead poisoning has been encumbered with an aura of mysticism which, while it must have discouraged some, has encouraged others to surround it with even greater difficulties. There is no single quantitative factor leading to the immediate diagnosis of lead poisoning. It is true that various criteria have been proposed which have been thought to be sufficient to make a clearcut diagnosis. However, as these criteria have been examined, they have been found to be incomplete, and, instead, the true diagnosis of lead poisoning has involved the summation and integration of a number of factors. For instance, the value of porphyrin excretion or blood porphyrin has been broached by investigators at various times as an indisputable index of lead poisoning but has been found by other investigators to be variable or without significance in true lead poisoning. With reference to the urinary excretion of lead, an increased output has, as Dr. Belknap has stated, significance only of lead absorption: of itself, it indicates only passage through or removal from the body without in any way implicating damage to the human organism; however, it is significant and helpful as an indication of pronounced absorption of lead. It is fortunate in this regard that the quantity of lead in the urine, which is of significance to the diagnostician, lies within values which lend themselves to convenient determination in the laboratory. In other words, the order of magnitude of urinary lead lies within the range of relatively significant fractions of a milligram per liter and not within the range of micrograms per liter. One factor on which Dr. Belknap places weight is basophilic stippling. While this has been accepted as one of the definite criteria of lead poisoning, it has been a sort of diagnostic football and has been kicked about more than it deserves. In spite of the fact that a few stipple cells occasionally appear in the blood stream of normal persons, and the further fact that stippling has been shown to occur in certain diseases and intoxications, Belknap, in his long study of lead poisoning and persons exposed to lead, has succeeded in placing this criterion of lead poisoning on a firm basis. The test or yardstick by which the efficacy of this means of diagnosis may be measured is indicated by the experience which he cited, namely, that the incidence of disabling lead poisoning promptly fell from 20 per cent to 0 per cent in a single lead storage battery plant and that by such medical control he has been able to keep these employees free from disabling lead poisoning for eleven years.

DR. R. T. JOHNSTONE, Los Angeles: Dr. Belknap, how many red blood cells on the average are represented by 50 fields, as blood smears are studied by you?

DR. E. L. BELKNAP, Milwaukee: About 10,000 red blood cells per 50 fields. The number of red cells per oil immersion field is about 200; thus, in 50 such fields, about 10,000 cells are counted. To gain the corresponding number of stippled cells per million red cells one would simply multiply the factor by 100. Of course, one should realize that is a rather rough index, because the number of red cells vary even in the normal person.

DR. JOHNSTONE: Dr. Wilentz, what do you recommend regarding the use of blood transfusion of whole blood in acute lead poisoning?

DR. W. C. WILENTZ, Perth Amboy, N. J.: I do not object to using it if I think the patient is that sick.

DR. JOHNSTONE: I do not believe that there are many cases of intoxication so severe that one need use it in advance.

DR. WILENTZ: I have never found it necessary.

DR. JOHN H. FOULGER, Wilmington, Del.: Nor I.

DR. JOHNSTONE: Dr. Foulger, do the solvents you discussed produce menstrual disorders?

DR. FOULGER: I know of no evidence that the solvents discussed produce menstrual disorders. In fact, I am inclined to think that very few chemicals, if any, as used in industry, interfere with menstruation. During the war, my co-workers and I studied numbers of women exposed to very active chemicals and found no such effects.

DR. JOHNSTONE: Dr. Wilson, what is the usual time in acute carbon tetrachloride poisoning before nephrosis or hepatitis develops?

DR. R. H. WILSON, Akron, Ohio: The process of nephrosis or hepatitis probably starts very soon after the beginning of exposure. Manifestations of nephrosis or hepatitis probably occur in six to twenty-four hours in acute poisoning.

DR. JOHNSTONE: Would you say, Dr. Wilson, that where there are signs of some intoxication present, actual observations

20. Robinson, H. M., and Robinson, H. M., Jr.: The Comparative Clinical Values of Some New Drugs in the Pyodermas, South. M. J. **40**: 409 (May) 1947.

21. MacKee, G. M.; Sulzberger, M. B.; Herrmann, F., and Karp, F. L.: The Treatment of Pyodermas with an Interface Active Solution of Tyrothricin, J. Invest Dermat. **7**: 175 (Sept.) 1946.

22. Meleney, F. L., and Johnson, B.: Bacitracin Therapy: The First Hundred Cases of Surgical Infections Treated Locally with the Antibiotic, J. A. M. A. **133**: 675 (March 8) 1947. Miller, J. L.: Comparison of Bacitracin with Other Remedies for Local Pyogenic Infections, read before the Section on Dermatology and Syphilology, at the Ninety-Seventh Annual Session of the American Medical Association, Chicago, June 25, 1948.

acute nephrosis or uremia will be evident in a week or ten days?

DR. WILSON: That is correct.

DR. JOHNSTONE: Dr. Wilson, one speaker included parkinsonian symptoms among the conditions due to industrial poisoning by carbon disulfide. Is the evidence clear on this point?

DR. WILSON: No.

DR. JOHNSTONE: Dr. Greenburg, do the industrial doctors have evidence that absorption of mercury could cause parkinsonian disease, for example, in a man who works for years treating grain for a seed company?

DR. LEONARD GREENBURG, New York: I have seen men in whom tremor has developed. Undoubtedly this will be true in certain cases. That is evident if one examines the handwriting. Psychic disorders also develop, but there is no reason to confuse that with straight parkinsonian syndrome, not related to occupation.

DR. JOHNSTONE: Is there any substantial evidence, Dr. Wilson, that delayed leukemia may result years after benzol intoxication?

DR. WILSON: Not in my experience. The acute benzol intoxication is usually manifested, as far as blood changes are concerned, immediately. I have never seen a case of late acute leukemia. It may develop in chronic conditions.

DR. JOHNSTONE: Dr. Wilentz, is hospitalization necessary in the treatment of lead intoxication?

DR. WILENTZ: I do not know a better place to receive treatment or a place where one can get better so quickly. Some men do not like it. I am sure that intensive therapy at the hospital will shorten disability. It is important that intravenous calcium therapy be given around the clock, and I know of no other place where this can be accomplished except in a hospital.

DR. JOHNSTONE: There is one question turned in which I cannot quite understand: What are the autopsy observations (I suppose) of encephalitis following lead poisoning?

DR. BELKNAP: Deaths due to lead poisoning are extremely rare in adults. There have been very few cases of encephalopathy due to lead in modern industry since the lead hazard in the ethyl gas industry was controlled entirely on the basis of engineering protective devices. However, men did die in that industry and studies have been made and reported. That is primarily a pathologic problem.

DR. JOHNSTONE: Dr. Sander, how can one accurately determine the nature of a dust, such as the difference between iron dust and silica? I suppose that the questioner had in mind determining the nature of the dust in the plant and then analyzing the collected dust by roentgen diffraction.

DR. SANDER: Chemical analysis, petrography and animal experimentation, in addition to the roentgen diffraction analysis, are the methods used to differentiate free silica from other dusts. Animal experimentation is especially useful when the silica content of a dust is known to be low. As Dr. Hamlin has said, he has had experimentation under way at the Saranac Laboratory for three years to determine whether the dust from grinding cleaned steel castings contains enough free silica to cause silicotic nodulation. The animals studied so far show no evidence of silicosis, but do show inert iron deposits in the lungs without any fibrotic reaction.

DR. JOHNSTONE: Dr. Hamlin, what is the incidence of pneumonia in the dusty trades?

DR. L. E. HAMLIN, Chicago: The incidence of pneumonia in my experience has been very low. In the old days pneumonia was a problem in the foundry industry, but with improved working conditions and better hygienic surroundings, there is very little today. In the mining industry in Upper Michigan, where I practiced for ten years, silicosis was common. Nodulation was extensive; yet, the incidence of pneumonia was extremely low. In fact, some of us felt that fibrosis was a factor as far as limiting the spread of pneumonia was concerned.

DR. JOHNSTONE: Dr. Sander, what is "welder's lung?"

DR. OSCAR A. SANDER, Milwaukee: When welders are exposed to excessive concentrations of fumes in confined and unventilated areas, roentgen changes of the lungs may develop after more than five years which somewhat resemble the change in silicosis. The stippled or pseudonodular pattern is due to inert deposits of iron oxide particles in the lymphatic vessels surrounding blood vessels. An important differential point between this benign pneumoconiosis and silicosis is that the root lymph nodes are not enlarged in the former as they are in the latter.

DR. JOHNSTONE: This question is directed to Dr. Belknap, by Dr. J. S. Alley of Midvale, Utah: How soon will stippling occur after massive exposure to concentrated lead fumes? Will other acute symptoms develop first?

DR. BELKNAP: Where lead exposure is massive enough to produce symptoms in a few hours, as with tetraethyl gas exposure, stippled cells do not appear as rapidly as symptoms. I have not had that type of exposure closely under my observation, but I would assume that it would take at least two or three days for stippled cells to develop. I did see this in a maintenance man exposed to lead fumes caused by using a welding torch on an oven where there had been much contaminating lead oxide. He showed a lead line of the gums and stippled cells within a week. However, he did not have enough massive exposure to have any disability. I have also seen men cutting lead-painted steel and those who metallized metal with lead-wire and blow torches, show many stippled cells coincident with symptoms arising within ten days after beginning lead exposure.

DR. JOHNSTONE: Dr. Hamlin, what type of treatment exists for the patient with chronic pulmonary fibrosis?

DR. HAMLIN: There is no definitely established treatment. Once pulmonary fibrosis has developed it is permanent. A worker with this condition should be removed from further harmful exposure. Aluminum therapy has been advocated and is now being used in a number of industries here and abroad. I have had no personal experience with it, but the status of it at this time seems to be that, while it does appear to prevent further progression of fibrosis, its value as a specific form of treatment has not been proved conclusively.

DR. JOHNSTONE: Are benzene fumes a causative factor in pulmonary neoplasms?

DR. WILSON: Not that I know of.

DR. JOHNSTONE: I do not believe that there is any evidence of that effect as yet.

Copper as a Snail Killer.—Copper has long occupied a unique position as a molluscicide. Its toxic action against freshwater snails and green algae, together with its comparative harmlessness to higher vertebrates and phanerogamic vegetation, have, when considered in conjunction with its relative inexpensiveness, made it the most favoured agent for snail-control campaigns.

A voluminous literature has appeared on the efficacy of various copper preparations — of which copper sulphate is the most popular—when tested against snails both in vitro and in the field, and large-scale snail-destruction campaigns, sometimes combining the use of copper with periodic drying, have been carried out in Egypt, Southern Rhodesia and elsewhere, as part of bilharzia-control schemes.

Khalil (1932) has given a detailed account, based on an extensive series of experiments in Egypt, of the value and limitations of copper as a snail-killer, and the developments in its use, which have been going on since Leiper's classical researches, are described in numerous publications by Barlow and Abdel Azim and others, who have established the real value of 5 parts per million of copper sulphate as a means of control in the field.—S. G. Cowper, Effect of Certain Inorganic and Vegetable Substances on the English Pond Snail Planorbis Corneus (Linné, 1758), *Annals of Tropical Medicine and Parasitology*, September 1948.

TREATMENT OF ALCOHOLISM WITH TETRAETHYLTHIURAM DISULFIDE (Antabus®)

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During some experiments performed with tetraethylthiuram disulfide (antabus®) in the laboratory, Dr. Jens Hald and one of us (E. J.) discovered that persons who have ingested this substance showed symptoms after consumption of alcohol which differed quantitatively and qualitatively from the common picture of alcoholic intoxication. The discomfort after alcohol consumption in persons treated with tetraethylthiuram disulfide was so intense that we decided to submit this drug to trial as a remedy for alcoholism. The clinical experiments were conducted by one of us (O. M.-L.). The present report includes a short review of the results obtained in the investigations on the biochemical mechanism of this effect and of the clinical results on 100 persons with alcoholism who were treated for six to twelve months.

PHARMACOLOGIC CONSIDERATIONS

Tetraethylthiuram disulfide is a white, or slightly yellow, powder which is insoluble in water. It is relatively nontoxic. The fatal dose is 2 to 3 Gm. per kilogram of body weight for puppies and rabbits.[1] The fatal symptoms are a gradual depression with ataxia and decreased respiration and pulse.[1a] Biopsy shows congestion of the lungs, advanced degenerative changes in the kidney and somewhat less intensive changes in the liver. The cellulosity of the bone marrow is greatly reduced.[1b]

Rats were given 1 mg. daily and rabbits 60 mg. daily for ten months without any influence on growth, body weight, appearance or blood picture.[2]

In man, no effect was observed after single doses of 3 Gm., or after doses of 0.25 to 1 Gm. taken daily for months. After such doses, no subjective or objective effects were noticed in most persons. Exceptions are mentioned later under after-effects. Elimination from the body is slow. In man the effect of 1.5 Gm. can be traced seven to eight days after ingestion, and the effect after a single dose in rabbits persists for seventy-six to ninety hours. No antabus® is excreted in the urine.

When a human subject has taken antabus® (e. g., 1 Gm.) twelve hours previously, the intake of alcohol results in the following symptoms: After five to fifteen minutes the person has a feeling of heat in the face. A few minutes later an intense vasodilatation is observed in the face and neck, making the whole area purple-red. Some patients even show vasodilatation on the upper part of the chest and the arms. Characteristic is the vasodilatation in the scleras. Slight edema in the loose connective tissue under the lower eyelids is also typical. The vasodilatation in the face is accompanied with a decided increase in skin temperature in this area.[3] The pulse rate is increased to 120 to 140. The blood pressure is unaltered or slightly depressed. The cardiac output is increased about 50 per cent in resting persons and only slightly (5 to 15 per cent) in persons doing moderate muscular work. The ventilation is increased, with a corresponding decrease in alveolar carbon dioxide.[4] The effect on the respiration and the pulse rate is eliminated during inhalation of pure oxygen. This suggests that the symptoms are due to a stimulation of the chemoreceptors in the carotid sinus. The volume of the respiratory dead space is increased or unaltered.

Sometimes nausea begins thirty to sixty minutes after consumption of alcohol. In such cases the intense flushing disappears and is replaced by facial pallor and a considerable fall in systolic and diastolic blood pressure. Copious vomiting may occur. Occasionally, the vomiting may begin suddenly with no, or a very short, nausea stage. Higher doses of alcohol, in some patients, result in dizziness, and a few times a patient has been unconscious for as much as a half-hour.

No other objective symptoms are observed. These symptoms are generally accompanied with an intense feeling of discomfort to the patient, who has a pulsating headache, palpitations and subjective dyspnea. In most cases, the patient notes a constrictive feeling in the neck, as though "the collar has become too tight." To this can be added a feeling of a "premature hang-over," which is difficult to describe, but which is highly disagreeable. In summary, the discomfort is so intense that, once experienced, it prevents an overwhelming majority of patients from further attempts to take alcohol as long as they are influenced by antabus.®

After moderate doses of the drug, the combustion rate of alcohol in man is the same whether or not the person has taken antabus.®[2] The same is seen in rabbits after moderate doses,[5] but, after ingestion of large doses of antabus,® the combustion rate can be considerably decreased. It is still unknown whether heavy doses, even in man, result in a similar decrease in the rate of elimination.

More important is the fact that the blood acetaldehyde level is increased after treatment with antabus® and subsequent consumption of alcohol to a concentration five to ten times higher than that seen when the same doses of alcohol are given to untreated persons.[6] Acetaldehyde is also excreted through the lungs and gives the expired air the intense, characteristic smell of the substance. When acetaldehyde is infused intravenously at such a rate that the concentration in the blood is kept on a level corresponding to that seen after the administration of antabus® plus alcohol, the same symptoms are seen in the same intensity.[7] Even here, the effect on ventilation and alveolar carbon dioxide is abolished after inhalation of pure oxygen. There can be little doubt that the clinical effect of alcohol after ingestion of antabus® is due to an increased

Dr. Jacobsen contributed the theoretic portions and Dr. Martensen-Larsen the clinical portions of the paper.

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In the United States the rights for the distribution of antabus® have been assigned to Averst, McKenna & Harrison Limited, under whose auspices clinical investigation of the drug is now being conducted in this country.

1. (*a*) Hanzlik, P. J., and Irvine, A.: Toxicity of Some Thioureas and Thiuramdisulphides, J. Pharm. & Exper. Therap. **17**: 349, 1921. (*b*) Brieger, H., and Hodes, W. A.: Toxicity of Dithiocarbamates, read before the Ninth International Congress of Industrial Medicine, London, 1948.

2. Hald, J.; Jacobsen, E., and Larsen, V.: Sensitizing Effect of Tetraethylthiuramdisulphide (Antabuse) to Ethyl Alcohol, Acta pharmacol. et toxicol. **4**: 285 (Dec.) 1948.

3. (*a*) Hald and others.[2] (*b*) Hald, J., and Jacobsen, E.: A Drug Sensitizing the Organism to Ethyl Alcohol, Lancet **2**: 1001 (Dec. 25) 1948.

4. Asmussen, E.; Hald, J.; Jacobsen, E., and Jørgensen, G.: Studies on the Effect of Tetraethylthiuramdisulphide (Antabuse) and Alcohol on Respiration and Circulation in Normal Human Subjects, Acta pharmacol. et toxicol. **4**: 297 (Dec.) 1948.

5. Larsen, V.: Effect of Antabuse in Combination with Alcohol in Experimental Animals, Acta pharmacol. et toxicol. **4**: 321 (Dec.) 1948.

6. Hald, J., and Jacobsen, E.: Formation of Acetaldehyde in the Organism After Ingestion of Antabuse and Alcohol, Acta pharmacol. et toxicol. **4**: 305 (Dec.) 1948. Hald and Jacobsen,[3b] Larsen.[5]

7. Asmussen, E.; Hald, J., and Larsen, V.: The Pharmacological Action of Acetaldehyde on the Human Organism, Acta pharmacol. et toxicol. **4**: 311 (Dec.) 1948.

concentration of acetaldehyde, which is formed by some unknown reaction of antabus* on the enzymes oxidizing alcohol in the organism.

The symptoms are seen after the ingestion of any alcoholic beverages and also after the taking of pure ethyl alcohol diluted with distilled water. The increase in skin temperature is seen when the blood alcohol is increased as little as 5 to 10 mg. per hundred cubic centimeters. The symptoms are fully developed at a concentration of 50 to 100 mg.; unconsciousness results at 125 to 150 mg. Some persons, especially heavy drinkers, at the first test seem to tolerate a rather high percentage of alcohol in the blood. By continued use of antabus,* the tolerance in most persons is considerably decreased. The effect persists as long as the alcohol remains in the blood (generally one to one and one-half hours for each average-sized drink taken). When the symptoms begin to fade, most patients feel exhausted and sleepy. After a few hours' sleep, they are completely recovered.

The hypersensitivity to alcohol generally begins three to four hours after the ingestion of a single dose of antabus* and is fully developed during the next twenty-four hours. Experiments with rabbits show that acetaldehyde formation increases with increasing concentrations of alcohol in the blood and with increasing doses of antabus,* up to a certain dose. The saturation dose of the drug in rabbits is 0.3 Gm. per kilogram of body weight. It is still uncertain whether a similar saturation dose is obtained in man. These observations are valid even for human beings, since increasing doses of both antabus* and alcohol increase the clinical effect.

CLINICAL EFFECT

All persons with alcoholism who have consulted us since December 1947 were treated with antabus.* Up to December 1948 the total number of patients was 550. The results for a small number have already been described.[8]

The first patients were treated on consultation. Later, it was found advisable to take those with the severer conditions, or those for whom alcoholism had caused an acute crisis in the home or family, into the sanatorium. The visit there has been short (from one to three weeks), since it is best to continue treatment in the patient's usual environment as soon as possible. Patients taken into clinics are treated in open wards and are allowed to pay short visits to their offices and homes. It is important for rapid mental and social restoration to bring patients back into their ordinary lives as soon as possible, so that they may learn to live nonalcoholic lives among normal drinkers.

The dosage varied during the period of experimentation. At the beginning, treatment was begun cautiously, with small doses which were increased with time since no severe after-effects occurred. In the material presented here, the treatment has been as follows: On the first day, 1 to 2 Gm. of antabus* was given; on the next two days, 0.75 to 1 Gm. Thereafter, 0.06 to 0.75 Gm. was administered daily. As will be stated later, some of these doses were too small. For this reason, we increased the initial dose to 2 Gm. the first day and 0.75 to 1 Gm. the following two days. The dose depends on the individual person and is adjusted so that flushing occurs after 5 Gm. of alcohol (one third to one half of a drink) is ingested. This dose lies generally between 0.25 and 0.75 Gm. daily. In most cases, the patients were given a "test drink" on the third day of treatment to experience the effect of alcohol. The patient was asked to drink as he was accustomed to, with the usual interval between the drinks, until he was forced to stop. As a rule, this point was reached after two and one-half to four and one-half drinks. The last half drink generally remained untouched. The test drinking was usually under observation. However, some patients feel tempted to drink in a bar, with instructive results.

The patients were followed with regular examination of the blood (red and white blood cell counts and hemoglobin determinations), tests on urinary albumin, bile pigments (and urobilin) and hepatic function (thymol turbidity test) and electrocardiograms. No pathologic changes have been observed. About 20 per cent of the patients (18 of the first 100) complained of tiredness, which persisted one or two months but disappeared during continued treatment. It was necessary to stop medication for this reason in only 1 patient. A few patients noted decreased sexual potency, but this complaint was also transient. Generally, the drug exerted a calming influence on the patient which was not at all undesirable. In 15 per cent of the patients (12 of the first 100) sleep was considerably improved, so that the use of sedatives was unnecessary.

No other after-effects were seen in the material here studied, or in the 550 patients under our control. Since September or October 1948 antabus* has been widely used in Denmark, Sweden, Iceland and Finland (on several thousand patients). A few other untoward after-effects have been noted and reported to us. One or two patients have shown a slight allergic cutaneous reaction, which disappeared readily after medication was discontinued. In 2 or 3 patients, a manic state developed during the first weeks of treatment. In these instances, it seemed as though the manic state was preceded by a feeling of dizziness and restlessness. The doses in these patients were comparatively high. They were hospitalized and, after discontinuation of the medication, the psychiatric symptoms faded within a few days.

The reaction after alcohol consumption may in some persons be either too severe or too slight. Severe reactions are generally seen after large doses of alcohol and can be rather alarming to the patient and his relatives. The following case was described by Linden.[9]

> After doses of antabus* of 1.5 to 1 Gm. and a moderate amount of alcohol, a 56 year old man fainted and had convulsions. He was cyanotic and appeared to be dying. The electrocardiogram showed an auricular flutter with 2:1 auriculoventricular block. He was given strophanthin as a stimulant and treated with oxygen. He began to recover after a half hour and was completely recovered in two hours. The heart function was normal the next morning.

Convulsions are seen in a few patients and are probably due to intense hyperventilation. The treatment for these patients is inhalation of carbogen* (95 per cent oxygen and 5 per cent carbon dioxide) and stimulation of the heart. In case of restlessness, moderate doses of quick-acting barbiturates may be of value.

Too slight reactions are also seen. A few patients flush and have palpitations or perhaps vomit after a few drinks. If they continue to drink beyond this point, their uneasiness suddenly disappears and they can continue drinking without any ill effects. This hap-

8. Martensen-Larsen, O.: New Lines in Treatment of Alcoholics, Ugesk. f. læger, **110**:1207 (Oct.) 1948; Treatment of Alcoholism with a Sensitizing Drug, Lancet **2**: 1004 (Dec. 25) 1948.

9. Linden, L.: Complications with Antabuse, Svenska läk-tidning, **45**: 1469 (Dec.) 1948.

pens especially when the dosage is too small. It was seen after doses of 0.25 Gm. daily and in 1 patient after 0.5 Gm. daily in connection with diarrhea.

When the medication is started during a period of heavy drinking, the uneasiness may be noted by the patient to a minor degree, and he will not discontinue

TABLE 1.—*Results in Persons with Alcoholism After Six Months of Treatment with Antabus**

	Socially Recovered	Much Better	Somewhat Better	Unchanged	Total
Habitual drinkers	21	6	4	7	38
Weekly drinkers	7	4	5	4	20
Periodic drinkers	24	9	3	5	41
Total	52	19	12	16	99
Medication					
Takes tablets daily by himself	14	2	1	0	
Takes tablets daily, but must be reminded	6	5	0	1	
Takes tablets daily, but must be reminded energetically	1	1	0	0	
Takes tablets occasionally	11	9	8	1	
Takes no medication	20	2	3	14	
Attitude of relatives					
Good understanding and active cooperation	33	10	1	2	
Home conditions favorable, but relatives neutral or ignorant of treatment	7	5	1	2	
Relatives unintelligent or unable to comprehend the idea of the treatment	3	2	4	3	
Abnormal family or home conditions	9	2	6	9	

drinking until after a few days' treatment. Three patients in the present material continued drinking at the beginning of treatment for one to two weeks in decreasing doses in spite of medication. One of these patients was socially recovered after nine months of observation and had no relapses. The other 2 were regarded as much better after an observation period of six months.

In 1 case, antabus* was given to a 60 year old man (not included in this material) in the middle of a

TABLE 2.—*Effect on Various Groups of Patients with Alcoholism After Six Months of Treatment with Antabus**

	Socially Recovered	Much Better	Somewhat Better	Unchanged	Total
I. Patients treated earlier without effect	23	10	8	9	50†
II. Patients previously fined or jailed because of law violation in connection with alcoholism	19	7	4	7	35§
III. Other patients	21	7	4	4	36

* Twenty-one patients received aversion treatment; 4 were treated by the aversion method and suggestion, and 25 were under hospital care or internment.

† Twenty-four of these patients also belong to group II.

‡ Seventeen were convicted of drunkenness in public places; 5 of theft, 12 of driving while drunk, 2 of fraud and 5 of disorderly conduct, while 5 patients had committed several offenses.

§ Twenty-four of these patients also belong to group I.

heavy drinking period. He apparently tried to conquer his uneasiness by drinking enormous quantities. He finally became unconscious and was brought to the hospital. Twenty hours after he had stopped drinking, his blood alcohol level was still 140 mg. per hundred cubic centimeters (blood acetaldehyde measured 1.3 mg.), and eight hours later his blood alcohol was 40 mg. (blood acetaldehyde was 0.3 mg.). The next day, he collapsed and died. This experience shows that it is inadvisable to treat such patients as outpatients. They require hospitalization, and medication should not begin until all alcohol has disappeared from the body.

No absolute contraindications have been seen thus far. The referred Swedish case indicates that some caution is necessary in persons with heart failure. Among our patients, we have several with cirrhosis, arteriosclerosis, diabetes or stomach ulcers. The treatment has not had any vicious effect on any of them. The intensity of the reaction is not diminished as a result of continued treatment, as often occurs in the Voegtlin or the suggestive treatment. On the contrary, the reaction increases during medication or when it is begun again after a lapse of time.

PSYCHIATRIC APPROACH

Besides the medical treatment (which effectively stops the alcohol consumption), the patients have been submitted to intensive psychotherapy, aimed at mental and social rehabilitation. With modifications introduced by a drug which effectively prevents the patients from drinking, the psychotherapeutic methods do not deviate

TABLE 3.—*Patients with Alcoholism Who Were Treated with Antabus® Grouped According to Psychiatric Symptoms*

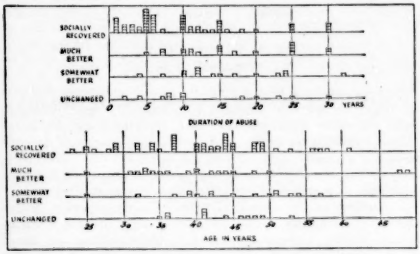
	No. of Patients
Patients with pronounced mental symptoms	
Socially recovered	5
Much better	1
Somewhat better	1
Unchanged	6
Total	13
Patients with slight mental symptoms	
Socially recovered	10
Much better	8
Somewhat better	3
Unchanged	2
Total	24
Apparently normal patients	
Socially recovered	36
Much better	10
Somewhat better	8
Unchanged	8
Total	62

in principle from those hitherto used. Therefore, only a few points will be mentioned which have proved to be of special importance to the treatment. As can be seen from table 1, a regular intake of the tablets is essential for successful treatment. Therefore, the first effort is to accustom the patient to take his medicament regularly. Here a member of the patient's household, preferably his wife, can be of much help in making the patient feel that the intake of the tablets is a routine procedure in his daily life. The tablets can be presented at the breakfast table quite as naturally as the coffee and the morning paper. The physician must see the patient at regular intervals, and the next interview must be set every time. If the patient breaks the appointment, the physician must call him and ask the reason.

As to the final prognosis, it is of utmost importance to induce the feeling in the patient that he is really sick and in need of treatment. He should be told that just as persons with diabetes must avoid sugar, so he must avoid alcohol and use antabus® as his insulin. He must be informed that his constitution is such that for him alcohol is a poison.

Group Therapy. — Group therapy has proved extremely useful from the very beginning. In the

sanatorium, the older patients follow with interest the newcomer's vain attempts to drink alcohol and even encourage him to experiment now and again. After a few days, this patient regards the new patients with the same interest and sympathy with which he was regarded. During this time, the patients may discuss



Graphs showing the influence of the age of the alcoholic patient and the duration of abuse on the results obtained on treatment with antabus.®

their problems freely with each other. Early in their treatment, they have the opportunity to assist others, which gives them the self confidence to conquer the inferiority complex that is pathognomonic to most persons with alcoholism.

For continued treatment, an association "Ring i Ring," on the pattern of Alcoholics Anonymous, has been formed. Here the members have the opportunity to fill in the gaps in their lives which remain after they begin abstinence. The fate of their fellows can be an encouragement or a warning to them. Finally, the mutual support is of paramount importance in this association, as in all other groups of this kind.

Physical Rehabilitations.—Physical rebuilding has been sustained with administration of vitamin B preparations and insulin in some cases. Even without this, it is astonishing how little time is required for the patient to conquer his tremor and his morning vomiting and to regain his appetite. Often, the patient is physically restored within one or two weeks.

PRESENT MATERIAL

From December 1947 to May 15, 1948, 104 patients asked for treatment for alcoholism. A few were treated in the clinic of the Frederiksberg Hospital, Copenhagen. Eight of the patients were women. All patients were submitted to the antabus® treatment. Four patients were unable to be contacted after two to three months of treatment. One patient died of a cerebral hemorrhage after three months of treatment; 99 could be followed for six months, and 42 of these for nine months. The age of the patients and the degree of their alcoholism are given in the tables.

RESULTS

The results were due to the combined use of the medicament and psychotherapy and are given in the tables. In these tables, the following terms are used: "Socially recovered" designates a patient who can competently perform his work and live in harmony with his family. He may have relapses, but they are few, do not last more than twenty-four hours and do not influence his work or his family life. "Much better" designates a patient who can perform his work with integrity and who has had a few relapses that have not disturbed his social status. "Somewhat better" designates a patient that is somewhat improved but is subject to attacks which influence his work and/or his family life. "Unchanged" designates a patient in whom no real improvement has been noted. All these judgments are based on the statements of relatives, and, in some cases, after personal and repeated inspection of the patients' homes.

The condition of the patient after six months of treatment, the readiness with which he takes the tablets and the attitude of the relatives are given in table 1. It may be seen that the results are best when the patient readily and steadily takes the tablets and when the relatives are understanding. The figure shows the influence of the age of the patient and the duration of abuse on the results obtained. In table 2, the patients are placed into groups according to their past lives. As is to be expected, patients who were previously treated without effect show worse results than the group not previously treated.

Table 3 groups the material according to psychiatric diagnoses. These diagnoses are independent of the patient's attitude to the treatment. Patients with more or less pronounced psychiatric symptoms (signs of psychoneurosis or a manic-depressive state) are more difficult to treat than the psychically normal patient. Of course, the terms refer only to the alcoholism of the patients. If a patient is termed "socially recovered," it means only that he has stopped drinking. His mental disorders generally remain and present new problems to the psychiatrist.

The results after three months of treatment are not much altered during the next three to six months. In a few cases, there may be both improvement or the opposite, but a patient who is socially recovered after three months of treatment has an 85 per cent chance to remain socially restored after six months of treatment. The results after nine months are about the same as after six months, but the figures are too small to permit definite conclusions. Table 4 gives the results after three, six and nine months of treatment.

TABLE 4.—*Status of Persons with Alcoholism Six Months After Institution of Treatment with Antabus® Compared with Status After Three and After Nine Months*

	Socially Recovered	Much Better	Somewhat Better	Unchanged	Total
Status after 6 months.....	52	19	12	16	99
Status after 3 months					
Socially recovered.....	43	2	2	2*	49
Much better.....	5	14	0	3	22
Somewhat better.....	4	2	10	0	16
Unchanged	0	1	0	11	12
Total.....					99
Status after 9 months					
Socially recovered.....	18	2	0	2*	22
Much better.....	1	5	0	0	6
Somewhat better.....	0	0	3	0	3
Unchanged	1	0	1	9	11
Not observed during the last 3 months.....	32	12	8	5	57
Total.....					99

* The same 2 patients.

In this treatment, relapses do not play the serious role as in other treatments of alcoholism. Relapses are seen in patients who have stopped medication or who are treated with too small doses. After four to eight weeks of treatment, a number of patients are convinced that they are cured and never will taste alcohol again and therefore stop medication. Sooner or later, such patients will be tempted to take a "single" drink with the well known results. If such patients

are still under observation, it is easy to stop the relapse in a day or two by means of renewed or increased medication. Generally, no serious damage is done. Often the accident will convince the patient that his optimism was unfounded and that he has to take his medicine for a long time. In these cases the relapse has fulfilled an instructive purpose. In cases in which the patient has stopped medication because he has no serious conception of his disease, it can be extremely difficult to keep him under control. Of course, his relapse can be cut short just as easily as in all other cases, but it will soon be followed by other relapses. Much patience is required on the part of the physician, relatives and friends to prevent such a patient from slipping out of control gradually.

Our experience is still too small to decide how long the patients must continue medication. Twenty-eight patients had no relapses during six months of observation, but only 11 of these continued medication that long a time. The others discontinued use of the drug after a longer or shorter time. Two patients stopped taking it after one month, and about half of the patients stopped after four to five months. It is, of course, necessary to follow these patients a long time and resume medication in case of relapse.

COMMENT

It is absolutely necessary to keep the patient under control for a long time, even after the cessation of medication. The patient still has the intolerance to alcohol which is characteristic of persons with alcoholism, and, regardless of how recovered they may feel, he always runs the risk of temptation. Experience has shown that even though the patient asserts his readiness to be cured at the beginning, it requires great effort on the part of the physician and relatives to encourage him to continue medication for a sufficiently long time. He is often inclined to take "holidays" in connection with approaching major parties. It must be explained to the patient that this procedure is wrong and will only result in more "holidays" and shorter intervals between. Antabus® is cheap and easy to administer, but it is also easy for the patient to discontinue treatment, thinking that he readily can stop drinking again by resuming medication. For this reason, the antabus® treatment offers new and difficult problems for the therapeutist.

Finally, we need not emphasize that six to nine months is an extremely short observation period to evaluate the final results for a cure for alcoholism. Nevertheless, we find antabus® promising and are convinced that, if properly used, it may be of value in the difficult task of treating persons with alcoholism.

SUMMARY

Alcohol given to persons previously treated with tetraethylthiuram disufide (antabus®) produces a series of disagreeable symptoms, which are the result of an increased concentration of acetaldehyde formed from alcohol in the organism. The symptoms are generally so severe that they prevent persons from taking alcohol. As long as the patients take the tablets, they will not drink.

Ninety-nine persons with alcoholism were treated with this substance and observed six months or more. After six months of observation, 52 can be regarded as socially recovered and 19 as much better. The medication must be combined with intensive psychotherapy in order to obtain permanent results.

Clinical Notes, Suggestions and New Instruments

CEREBRAL THROMBOSIS PRECIPITATED BY INJECTION OF A MERCURIAL DIURETIC

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Serious untoward effects from the use of mercurial diuretics in congestive heart failure have been relatively rare. Although some immediate fatalities have been reported from the intravenous use of these agents, it is generally recognized that the incidence of such reactions must be extremely low. Nevertheless, routine administration by the intramuscular route has been advocated as a means of preventing fatalities of this type.

Regardless of the method of administration, however, severe diuresis occasionally causes weakness, anorexia, mental confusion, apathy, restlessness, delirium, hallucinations and more rarely coma and death. It has been observed, moreover, that such manifestations of dehydration, which generally develop six to twelve hours after injection, are more prone to arise in the elderly patient.

In analyzing the toxic reactions to mercurial diuretics encountered at the United States Marine Hospital, Staten Island, during the past ten years, we observed a side effect heretofore not reported, namely, cerebral thrombosis. It had been the custom to inject 2 cc. of the diuretic intravenously in all cases in which the drug was used. No immediate serious reactions were encountered. In 3 patients, however, hemiplegia developed eight to fourteen hours after injection. Each of these patients was over 70 years of age. Two had hypertensive heart disease, one with sinus tachycardia and the other with auricular fibrillation. The third had calcareous aortic stenosis with sinus rhythm. All were in a stage of moderate congestive failure. In all of the patients there was a precipitous fall in the blood pressure following profound diuresis. The course was progressively downhill, with termination in one to three weeks. Two of the patients came to autopsy, and in each a fresh thrombus was found at the site of atheromatous degeneration in the left middle cerebral artery.

COMMENT

It is acknowledged that hemiplegia may arise from various causes in the elderly subject with congestive heart failure. Indeed, diminished blood flow to the brain in circulatory failure may in itself precipitate cerebral thrombosis. Embolization to a cerebral artery, particularly when auricular fibrillation has been present, as well as cerebral hemorrhage, cannot be excluded on purely clinical grounds. In the cases studied at necropsy, however, neither of the latter conditions was observed. The development of cerebral thrombosis eight to fourteen hours after an injection of a mercurial diuretic which caused extreme diuresis and fall in blood pressure strongly suggests a causal relationship in these cases. Excessive diuresis with or without a lag in the mobilization of tissue fluids undoubtedly may lead to appreciable decrease in circulating blood volume, cardiac output, systemic blood pressure and cerebral blood flow. It is conceivable that fresh coronary thrombosis may be precipitated in a similar manner when there is underlying coronary disease.

Experience in the handling of cardiac conditions soon teaches that the dosage of the mercurial diuretic, like that of digitalis, must be tailored to fit the patient. Not infrequently, 0.75 cc. is found to produce the desired effect without the weakness, prostration, muscle cramps and other symptoms which frequently follow larger doses. The routine use of 2 cc. for a first injection, whether given intramuscularly or intravenously, should be discouraged, particularly in elderly subjects.

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SUMMARY

Cerebral thrombosis with hemiplegia appeared to be precipitated by the injection of a mercurial diuretic in 3 elderly patients with congestive heart failure. This complication followed profound diuresis and fall in blood pressure resulting from excessive dosage of the drug. Coronary thrombosis could conceivably be caused in similar manner when there is underlying coronary disease. The routine use of 2 cc. of a mercurial diuretic for a first injection should be deprecated, especially for patients of advanced age.

Council on Physical Medicine

The following statement has been prepared by Dr. Charles S. Wise of the Department of Physical Medicine, George Washington University, and Chairman of the Committee on Cooperation of the American Congress of Physical Medicine with the Food and Drug Administration, as a result of conferences at the annual meeting of the American Congress of Physical Medicine. It has been reviewed by officials of the Food and Drug Administration, who have offered no adverse comment, and has been approved by the Council on Physical Medicine.

HOWARD A. CARTER, *Secretary.*

A GUIDE FOR LABELING OF INFRA-RED HEATING DEVICES

With the establishment of physical medicine as a recognized medical specialty, qualified physicians in this field must assume some responsibility in the protection of the general public from false or misleading claims made in conjunction with devices which are becoming increasingly available. The Council on Physical Medicine of the American Medical Association is responsible for censorship of such claims made in regard to physical devices primarily intended for sale to physicians. The Food and Drug Administration of the Federal Security Agency, moreover, has the responsibility for protecting purchasers from misbranded or dangerous devices and drugs. The excellent progress already made in the field of drug therapy regarding high standards of labeling and accurate allowable therapeutic claims is largely due to the expert assistance which has been accorded the Food and Drug Administration by the various medical specialty groups. It is to be hoped that similar high standards for labeling and therapeutic claims for physical devices might be obtained through the provisions of the Federal Food, Drug and Cosmetic Act and the counsel and advice of specialists in physical medicine.

An immediate problem at hand has arisen through the widespread distribution and use by the lay public of infra-red heating devices. Many of the reputable manufacturers of infra-red heating lamps have continued to maintain high standards in their labeling and therapeutic claims in connection with their products, and it is expected that they will continue to maintain these high standards. Unfortunately, however, the general public is being continuously bombarded by advertising and labeling from manufacturers of heating lamps in which a host of therapeutic claims are made, many of which are open to serious question. Aside from being marketed with false and misleading therapeutic claims, many of these lamps are not supplied with adequate directions for use, and the inherent dangers of indiscriminate use of heating devices are obvious to the trained physiatrist. In view of this serious situation, the Committee on Cooperation of the American Congress of Physical Medicine with the Food and Drug Administration, in conjunction with the Council on Physical Medicine, has attempted to set up a minimal guide for labeling of infra-red devices based on the medical facts available from experts in this field.

It is the consensus among physiatrists that infra-red heating is in no way a specific therapy. It is felt that such standards as are applied to nonspecific drugs regarding therapeutic claims should also be utilized as a model for therapeutic claims for infra-red heating devices sold generally. For example, in the sale of such drugs as acetylsalicylic acid, or other nonspecific analgesics, the Food and Drug Administration regards as appropriate the claim "For relief of minor muscular aches and pains." It is felt that additional reference to specific disease entities for infra-red heating devices would lead to inappropriate use by lay purchasers in the belief that the device is a treatment for the underlying cause of the disease rather than beneficial only as a palliative. In addition, the inherent dangers associated with self diagnosis and self treatment in serious disease conditions would be involved.

It was also the consensus of the committee and other physiatrists consulted that the use of the terms "penetrating" and "deep" used in the labeling of infra-red heating devices is definitely misleading. When these terms are employed in conjunction with therapeutic claims for relief of muscular aches and pains, experience shows that the uninformed general public is misled into the belief that this radiation penetrates to the site of the involvement. Although it is well known that certain portions of the infra-red spectrum can pass through tissues to a greater extent than others, the penetration even with the shortest infra-red radiation is measured in millimeters. In view of this degree of penetration, and since we have effective means for deep heating by diathermy, and since the term "deep therapy" is used in conjunction with roentgen radiation, where depths of many centimeters of penetration are obtained, it is felt that these two terms are misleading and should not be employed in the labeling of infra-red devices.

To insure maximum protection of the general public in the use of physical devices, it is essential that the labeling contain adequate directions for use and adequate warnings against misuse. In a survey of representative labeling of infra-red heating lamps it is apparent that many manufacturers fail to include adequate directions and precautions. The committee believes that adequate directions should include the minimum safe distance at which the lamp should be placed, in order to provide a comfortable warmth. It is also advised that adequate warnings should be set forth against the unattended use of infra-red heat for children, debilitated persons, over anesthetic skin areas or in the presence of poor circulation.

Such gross mislabeling of physical devices as exists today reflects poorly on the status of physical medicine as a responsible medical specialty. The physiatrist should assume the responsibility for lending expert counsel to the Food and Drug Administration in cooperation with the Council on Physical Medicine in its efforts to obtain suitable standards for labeling of all physical devices for sale to the general public.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

ADRENAL CORTEX EXTRACT (See New and Nonofficial Remedies 1948, p. 364).

The following additional dosage form has been accepted:

THE UPJOHN COMPANY, KALAMAZOO 99, MICH.

Solution Adrenal Cortex Extract: 50 dog units per cc., 50 cc. vials. Each cc. contains not less than 50 dog units when assayed by the Cartland and Kuizenga method, in isotonic sodium chloride solution. Preserved with alcohol 10 per cent.

DIGITOXIN-U.S.P. (See New and Nonofficial Remedies 1948, p. 267).

The following dosage forms have been accepted:

S. F. DUBST & COMPANY, INC., PHILADELPHIA 20

Tablets Digitoxin: 0.1 mg. and 0.2 mg.

CARROLL DUNHAM SMITH PHARMACAL CO., NEW BRUNSWICK, N. J.

Tablets Digitoxin: 0.2 mg.

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SATURDAY, APRIL 2, 1949

THE NATIONAL PHYSICIANS' COMMITTEE

For more than ten years the National Physicians' Committee has been a leader in the defense of the freedom of American medicine; its support has come largely from voluntary contributions of the medical profession and from many industries related to the provision of a high quality of medical service. Like every other person and agency that has become involved in what is essentially a political controversy, the National Physicians' Committee has been subjected to vilification and abuse, mostly by those who were offering to trade medical care for political prestige but, in some instances, also by those who should have been friends. Under the leadership, from the beginning, of Dr. Edward H. Cary of Dallas, Texas, the committee has mustered to the support of the medical profession great numbers of citizens who saw in governmental regimentation of medical care but the first step toward the destruction of the American democracy. On the Board of Directors of the National Physicians' Committee former presidents of the American Medical Association, presidents of state medical societies, members of the House of Delegates and many other medical leaders not associated with the American Medical Association have served without compensation and often even without payment of the expenses covering their travels. Their work has been done in the missionary spirit.

With the coming of the present federal administration, the controversy over insurance to cover the costs of medical care has moved into a new level of intensity. Associated now with the promotion of this legislation by Wagner, Murray and Dingell and others leaning far to the left in governmental affairs, such as Senators Taylor, McGrath and Pepper, are misguided philanthropists and ambitious politicians who are using the vicious technics of propaganda to produce disaffection in the American Medical Association, distrust of medical leaders and enmity for the medical profession as a whole. Fortunately the prestige of scientific medicine in the United States is so high that even this campaign could not injure it. Fortunately most American people are trustful of their individual doctors. This campaign can do them little harm. However, as was emphasized by Dr. Frank F. Borzell, Speaker of the House of Delegates, in a recent communication, the technic of the opposition has been the old "divide and conquer" formula. Surely the physicians of this country who are in a preponderant majority opposed to governmental regimentation of medical practice will recognize the nature of the campaign that is being waged.

No one asserts or claims that leadership in American medicine has not on occasion made mistakes. No one claims that every decision by the National Physicians' Committee has been perfect. No one claims even that the House of Delegates has not on occasion been slow to change its point of view. But medical leadership does claim that physicians must have evidence of the desirability of new methods and new technics in the delivery of medical service before it can act for the medical profession of the nation in accepting any proposal. Indeed, the great hazard of all such legislation as that which perpetrated the National Health Act on the people of Great Britain is the difficulty of eliminating such a procedure even after its faults have become horribly obvious. Better to delay in the interest of safeguarding the public health than to be pushed for public favor into a position from which there is no retreat.

When the National Physicians' Committee was first proposed as an agency to carry the campaign, its existence was justified by the statement that new times demand new technics. Today when the leader of a new federal administration throws the entire force of his position and his administration behind governmental medicine, the new approach adopted by the House of Delegates was the voluntary assessment of the membership of the American Medical Association in support of a far more powerful process of education of the people on this subject than has ever previously been possible. The medical profession has responded wholeheartedly; already enough funds are in hand to meet the budget of the first year.

Obviously the next question must be as to the future of the National Physicians' Committee. What that future is to be will depend on the decision of its own board of directors, since the organization has not been in the past and is not now in any way bound by the American Medical Association. No doubt its directors will continue to give their utmost support to the cause of freedom for American medicine; no doubt the agencies that have supported its work in the past will decide to continue if not increase their support to this cause under the stress of the intensified threat. The National Physicians' Committee has rendered an important service and has had the approval of the House of Delegates of the American Medical Association.

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PENICILLIN FOR ORAL PROPHYLAXIS OF VENEREAL DISEASE—A WARNING

In October 1948, Eagle[1] reported the results of a study conducted in a Naval activity which showed that 100,000 to 250,000 units of penicillin by mouth, taken after exposure to venereal disease, would reduce the incidence of gonorrhea by 85 per cent or more. Following the publication of this report came strong pressure for general adoption of this measure. A second study conducted in the Navy[2] indicated that the prophylactic effect of orally administered penicillin on gonorrhea diminished fairly rapidly with the increase of time between exposure and ingestion of the penicillin. After an elapsed time averaging fifteen hours between exposure and prophylaxis, the efficacy of the measure apparently dropped to less than 50 per cent.

The Navy does not contemplate general adoption of this prophylactic measure against venereal disease. First, the method will presumably not protect against chancroid, lymphogranuloma venereum or granuloma inguinale, diseases which are of importance in many areas of the world. The efficacy of the measure against syphilis is not known and can be determined in man only after long and careful studies involving hundreds of thousands of individual uses. A long time must elapse before the reliability of this procedure as prophylaxis against syphilis can be established. Estimates indicate that a cost of approximately $75 per case of gonorrhea prevented at one of the Navy's largest prophylactic stations would have been incurred,[3] had oral prophylaxis with 250,000 units of penicillin been added to the standard Navy prophylaxis. This cost would of course diminish in proportion to the increased risk of contracting gonorrhea which exists in certain foreign ports, and the measure might approach economic justification in certain selected localities. The mass use of penicillin orally for prophylaxis of venereal disease will probably be adopted by the Navy, if at all, only for certain selected areas and periods when risk of contracting venereal disease in a particular group is abnormally high. The procedure will not of course be recommended as the sole prophylactic measure.

The use of penicillin orally by persons not in armed forces will be a matter for individual decision, if the tablets are made available over the counter. For those who do not use prophylactic measures or whose skill or knowledge are insufficient to use known effective measures properly, and possibly for women, this method offers for the time being a valuable protection to health. The method can be demonstrated to be economically unsound, since scores of tablets would be taken in order to prevent a single attack of gonorrhea in most American cities.

The measure presents a potential hazard of great magnitude to the venereal disease control programs of public health agencies. Some laboratory evidence indicates that the tendency of the gonococcus to become resistant to penicillin is much less than its tendency to become resistant to sulfonamide compounds. The resistance to penicillin is rather easily lost. After a failure of cure with a given dose, the same dose on a later day may sometimes effect a cure.

One reason that penicillin-resistant strains of gonococci have not become prevalent in this country is believed to be that the standard dose of penicillin used in treatment in this country is several times the minimal curative dose. Usually the dosages used will cure all but 1 or 2 per cent of the cases in the first course of treatment. This excessive dosage will kill off promptly almost all mutant strains that have developed only moderate resistance. Occasionally as much as 900,000 units of penicillin is needed to obtain a cure in gonorrhea.[4]

Considering that blood levels obtained by oral administration of penicillin are only a small fraction of those obtained by the standard parenteral treatment for gonorrhea, the general adoption of oral prophylaxis against gonorrhea might eventuate in a large number of persons' harboring gonococci and receiving frequent subcurative doses of the antibiotic. This new situation would be ideal for production and propagation of resistant strains of gonococci. Although the possibility is as yet only a question, the general use of penicillin orally for the prophylaxis of gonorrhea might hasten the day when 1,000,000 units of penicillin will be required to cure an average case of gonorrhea.

1. Eagle, H.; Gude, A. V.; Beckman, G. E.; Mast, G.; Sapero, J. J., and Shindledecker, J. B.: Prevention of Gonorrhea with Penicillin Tablets. Public Health Rep. **63**: 1411-1415 (Oct. 29) 1948.

2. Campbell, V. W. H.; Dougherty, W. J., and Curtis, C. E.: Delayed Administration of Oral Penicillin as Prophylaxis for Gonorrhea, to be published.

3. Because of recent reduction in the cost of penicillin to the Government this figure would perhaps be approximately $30.

4. Parkhurst, G. E.; Harb, F. W., and Cannefax, G. R.: Penicillin Resistant Gonorrhea vs. Non-specific Urethritis, V.D.I.: **28**.. 211-213, Oct. 1947.

ROLE OF THE HOSPITALS IN MEETING NEED FOR PHYSICIANS FOR THE ARMED FORCES

The Council on National Emergency Medical Service of the American Medical Association held a conference in the headquarters office recently with a view to determining procedures to be followed in obtaining the physicians immediately required by the armed forces. The response to registered letters sent by Mr. Forrestal to all young physicians trained under the A.S.T.P. and V-12 programs who had not yet had military service was quite inadequate. Apparently but few of these young men are impressed with their responsibility in the present emergency. Most of them are of course at present engaged in residencies, which apparently they do not wish to leave. The Army, Navy and Air Force require more than two thousand doctors to take the place of physicians whose two year service

periods expire by December 31. Replacements must be available, preferably by that time. The proposal has been made that hospitals from now on give credit in making their appointments to residencies to those young physicians who have had military service. In competitive examinations such credit may well be the determining factor in making the appointment. Unless the response is sufficient to meet the need, the federal government will unquestionably have to secure these young men by draft, and the Association will certainly not be in any position to oppose such draft.

Many men in this group are deterred from accepting reserve commissions by contracts with hospitals for residencies. Hospitals should review the contracts that they have made for the next year. In the instances in which they have contracted with men who have not had military service they should discuss the possibility of deferring the date for fulfilling the contract and hold the residency available until the physicians concerned have completed their period of service in the armed forces; this period will be two years. In the interval hospitals should easily obtain temporary replacements, by utilizing the services of physicians who have completed their military service.

Current Comment

A STATE PROGRAM AGAINST CANCER

The Illinois Division of the American Cancer Society has mailed a letter with the approval of the American College of Surgeons, the "Downstate" Projects Committee, the Medical and Scientific Committee of the Illinois Division and the Cancer Committee of the Illinois State Medical Society to the president and the secretary of each county medical society. The letter stresses a growing demand by the public for a physical examination which would aid in early detection of cancer. The establishment of cancer detection centers would be difficult, and it has been suggested that "every doctor's office act as a Cancer Detection Center." The following minimal examination may be performed in each doctor's office. This examination would include a history to elicit possible symptoms of cancer, examination of the various orifices, examination of the skin and palpation of lymph nodes, blood pressure, examination of heart and lungs by percussion and auscultation, careful examination of the female breast, abdominal palpation, bimanual and visual pelvic examination in women and digital rectal examination to include prostate in men, and also urinalysis. Vaginal smear study, complete blood examination, roentgen examination of the chest and the like could be eliminated as a routine procedure. The authors of the letter felt that this plan would benefit the medical profession by improving medical public relations. Although limited in scope, the proposal is the first cooperative effort of its kind developed for the medical profession of Illinois.

MICROWAVE RADIATIONS

Osborne and Frederick [1] have studied the effects of microwave radiations on the living tissues and particularly on the eye. The radiations were formed by the Raytheon® microtherm which generates energy in a continuous wave, air-cooled magnetron oscillator tube, the first generator of this type to be developed for the heating of human tissues. The microtherm operates at a frequency of 2,400 to 2,500 megacycles or at a wave length of approximately 12 cm. with a maximum power output of 125 watts. After exposure of thighs of dogs to high frequency energy, the maximum temperature was observed in the subcutaneous level and decreasing temperatures were found with increasing depths. The average temperature at a depth of 2 inches (5.1 cm.) from the skin surface was 104.1 F. In 7 "acute" experiments on dogs the eye was exposed to microwave radiations. The average temperature of the vitreous body following microwave treatment was 105.8 F. One animal received a series of six treatments over a period of three weeks. Evidence of damage to the eyes or contiguous tissues did not appear. In twenty-four experiments on human subjects the thigh was exposed to microwave radiations. The average temperature at a depth of approximately 2 inches immediately following irradiation was 104.2 F. One small superficial blister was produced. The treatments were comfortable to the patients and a minimum of erythema was noted. Worden and his associates [2] report experiments on the temperatures of the skin, subcutaneous tissue, superficial muscle and deep muscle of the thigh of the dog after exposure to microwaves with the circulation intact and after ischemia produced by clamping the abdominal aorta. The temperature rises in the ischemic tissues were slightly higher than in normal tissues but were not considered significant after five or ten minutes of exposure, nor was there any evidence of burning after exposure for these shorter periods. After fifteen to twenty minutes of exposure the increased temperatures in ischemic tissues were considered significant with gross evidence of burning in most of the animals. The authors conclude that temperature tolerated by normal tissues cannot be regarded as the safe range of tolerance for ischemic tissues. Bony prominences were potential sites for formations of blebs. Richardson and his associates,[3] utilizing the Raytheon® microwave generator, produced cataractous lenticular opacities in rabbit eye after a direct single exposure. The average temperature of the vitreous in this experiment was found to be 55.1 C. at the posterior pole of the lens, while that of the cornea was found to be 49.4 C. A series of repeated exposures of a smaller magnitude resulted in cataractous lenticular opacities after a delay of two to forty-two days. Until further data are accumulated, precaution should be observed in the use of microwaves in the region of the face and orbit.

1. Osborne, S. L., and Frederick, J. N.: Microwave Radiations, J. A. M. A. **137**: 1036-1040 (July 17) 1948.
2. Worden, R. E.; Herrick, J. F.; Wakim, K. G., and Krusen, F. H.: The Heating Effects of Microwaves With and Without Ischemia, Arch. Phys. Med. **29**: 751-758 (Dec.) 1948.
3. Richardson, A. W.; Duane, T. D., and Hines, H. M.: Experimental Lenticular Opacities Produced by Microwave Irradiations, Arch. Phys. Med. **29**: 765-769 (Dec.) 1948.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

March 28, 1949.

A. M. A. Leaders and Secretary Krug Plan New Medical Missions

Secretary of the Interior Krug conferred on March 24 with leaders of the American Medical Association on cooperative sponsorship of new medical missions. These will be undertaken, probably first in Alaska and on Navajo-Hopi reservations of the Southwest, as a result of the success which attended the eight medical surveys conducted in 1947-1948 under similar auspices. The new program, however, will concern itself with medical care and advanced instruction of Indian Bureau doctors, the task of surveying the needs having been completed. The American Medical Association again will have the responsibility of selecting teams of specialists to go on the missions. It is expected that the first will be sent out this summer, probably to Sitka, Alaska. Attending the March 24 conference were Drs. R. L. Sensenich, Ernst E. Irons, George Lull, Morris Fishbein, Ernest B. Howard, James R. Miller, Elmer L. Henderson, Louis H. Bauer, Edwin S. Hamilton, Joseph Lawrence, William A. Morgan and R. Lyman Sexton.

During April and May, the Bureau of Indian Affairs will make an effort to administer BCG vaccination against tuberculosis to all Indian children who are shown by test to be unexposed. Eight teams, each comprising a physician, a public health nurse and a recording clerk, will give the vaccinations in the following states: Arizona, Colorado, New Mexico, Utah, Idaho, Montana, Nebraska, North Dakota, South Dakota and Wyoming.

Hearing on Veterans Hospitals Nears Close

Protests against proposed retrenchment of the Veterans Administration hospital construction program were heard by a special Senate subcommittee during the week ended March 26. A supplementary statement presented by the American Hospital Association and a factual report by the Oklahoma State Medical Association were among the few documents added to the hearing record which did not criticize President Truman's executive order to eliminate or reduce the size of thirty-eight new hospitals for veterans.

John H. Hayes, superintendent of Lenox Hill (New York City) Hospital and chairman of the Council on Government Relations, American Hospital Association, filed a statement emphasizing that the veterans hospital program exceeds the need of service-connected cases. Dr. Austin H. Bell, representing the Oklahoma State Medical Association, presented statistics on availability of physicians, dentists, nurses and auxiliary personnel in his state, leaving it to the Senate subcommittee to decide whether their numbers are sufficient to permit adequate staffing of veterans hospitals in Oklahoma. According to his testimony, the state has 2,266 licensed practitioners of medicine, 752 dentists, 3,513 registered nurses, 210 registered laboratory technicians, 71 registered x-ray technicians, 20 registered physical therapists and nine registered occupational therapists.

Surgeon General Appeals for Restoration of Budget Cuts

Dr. Leonard A. Scheele, Surgeon General of the U. S. Public Health Service, went before the Senate Appropriation Committee on March 24 to appeal for restoration of funds which had been eliminated by the House when it passed the agency's budget for 1950. Principal items at issue are: general assistance to the states, control of communicable diseases, expenses for administration of the Hill-Burton hospital construction act, a special vital statistics project and water pollution control.

Chief emphasis was placed by Dr. Scheele on the need for appropriating the full amount of $24,408,000 which was approved by the Budget Bureau for assistance of local public health units, immunization programs and other forms of aid to the states. This figure was trimmed to $13,600,000 in the House-passed bill.

"State health officers have given us their positive assurance that the entire amount contained in the President's budget is essential and can be utilized effectively at this time," said Dr. Scheele. "The program of general assistance to the states is the backbone of expanding federal-state cooperative activities in the field of public health."

The other reductions which he asked the Senate to restore were $250,000 for communicable disease control, notably malaria and typhus work in endemic areas; $400,000 for expenses of administering the Hill-Burton act; $295,000 for a vital statistics project, one phase of which is a test of the completeness of birth registration, and $380,000 for administration of the water pollution control act.

Enactment by the Senate of the appropriations bill is expected in April. The measure then will be sent to conference, where differences between the House and Senate will be ironed out and compromises effected.

Lodge Bill to Provide "Free" Drugs Reintroduced

A federal-state program designed to raise health standards and give economic relief to patients who are medically indigent has been proposed again by Senator Henry Cabot Lodge Jr. (Republican, Mass.) His bill, S. 1106, is identical to the one he submitted in the last session of Congress. Drugs, roentgenologic services, laboratory diagnostic services and respirators would be made available without cost to the patient when the need for such aids was certified by a local administrative authority, by terms of S. 1106. One half the cost would be borne by the federal government. Eligibility of applicants would be determined locally rather than by the Surgeon General of the Public Health Service, who would have general supervision of the program.

Other legislation introduced the first week in March included bills that would further liberalize provisions of the Hill-Burton Act; establish a Federal Commission on Services for the Physically Handicapped and amend the Food and Drug Act to provide for certification of drugs composed wholly or in part of aureomycin, chloramphenicol (chloromycetin*) or bacitracin.

British Health System Described by Dr. Davis

The February 11 issue of *Public Health Reports*, weekly publication of the U. S. Public Health Service, consists mainly of a detailed account of the organization of the British National Health Service, which became effective on July 5, 1948. The author is Dr. Burnet M. Davis, of the Division of Public Health Methods, U. S. Public Health Service. He is a son of Michael M. Davis, executive director of the Committee for the Nation's Health.

"No attempt is made to pass judgment on either the desirability or feasibility of the program, or to appraise its operation," Dr. Davis says in the article's introduction. The account covers 30 printed pages.

Veterans Administration Designates 5 Medical Substations

Atlanta, Boston, San Francisco, St. Louis and Fort Snelling, Minn., have been announced by Veterans Administration as key positions from which medical supervision of hospitals will be performed. Their selection follows elimination of the Veterans Administration's branch office system, which provided for a chief medical officer at each of the thirteen branch offices. Their former functions are now centered in Washington.

Hoover Commission Favors Science Foundation

Establishment of a National Science Foundation is recommended by the Hoover Commission in a three part report on federal research transmitted to Congress on March 25. The science foundation bill already has been passed by the Senate, and House hearings on the question are scheduled for March 31, April 1 and April 4.

NATIONAL CONFERENCE ON RURAL HEALTH

Fourth Annual Meeting, convened at the Palmer House, Chicago, Feb. 4 and 5, 1948

DR. F. S. CROCKETT, Lafayette, Ind., *Chairman*, Presiding

FRIDAY FEB. 4, 1949

CHAIRMAN CROCKETT: Our first conference, as you know, explored the rural health situation in all parts of these United States. We came away with a truer picture of the rural needs and a better recognition of what it would take to cure those needs. The atmosphere of honest candor and friendly understanding set the pattern for these subsequent meetings. We hope we can continue on that broad friendly informative basis.

In our second conference, we employed the panel type of discussion with study of such subjects as how to get and keep medical personnel, especially doctors, nurses and dentists; hospital and diagnostic facilities; medical care for low income families, and prepayment plans for medical and hospital care. We reverted to the didactic type of program in our third conference. We paid tribute to rural youth, as eminent essayists gave us the benefit of their thinking. We learned that the tradition of the country as a healthful place to live was subject to some correction. We were told that the country was not better or worse than the city. Each, to be a healthful place to live, must resort to well known health measures.

This year we study the rural and farm environment. Life in the country is surrounded by many hazards; farm and highway accidents, animal diseases affecting human beings, depletion of the soil affecting nutritive crops, nutritive value of crops, and, since the war years, introduction of pestilence control in the use of chemicals not too well understood in relation to their poisonous qualities. This points to the preventive measures which local and state health councils must make.

Each year we continue to discuss rural needs in the light of the country doctor and community responsibility. It is a two way road and the trip must be made together.

Health programs of national organizations are an important part of this program today and are placed first in recognition of that fact. The American Medical Association has sought to work harmoniously with any and all groups interested in rural health. A number of other agencies have been active in this same field. They have all made valuable contributions to specific phases of the problem.

The plan of our committee is unity of effort. We are not just conducting another plan. We are trying to get all the other agencies, all other people that are interested in rural health, to join with us in a unified effort to reach the common objective. I am sure we have in the Community Health Council the mechanism for achieving unity of purpose and action and the avoidance of overlapping.

In forming the panel memberships we have tried this year especially to have persons who have never been on these programs before, leaders and other authorities who we felt had really new points of view and fresh enthusiasm. We have purposely left the members of our committee and our advisory committee free to mix with the audience and learn for themselves the strength and weakness of our present conference methods.

We have first the health programs for the national farm organizations. We have asked Mrs. J. Laning Taylor, Educational Director of the National Cooperative Milk Producers Federation of Washington, D. C., to present their program first.

Health Program of the National Cooperative Milk Producers Federation

MRS. J. LANING TAYLOR, Washington, D. C.: The National Cooperative Milk Producers Federation is a group of cooperative associations operating across the nation in forty-seven states and owned and controlled by the farmers themselves—some 425,000 of them. These associations fall into a number of categories. Some near large urban areas are primarily fluid milk bargaining groups. Others handle milk through their own facilities; from the farm to the consumer's doorstep. Many are engaged in manufacture of butter, cheese, evaporated milk or other dairy products. All are chiefly interested in marketing of milk, and all have interests and functions aside from marketing.

Health programs are basic to their business. All of us in the dairy industry are in a real sense purveyors of health. These foods require unusual sanitation in handling. They are subject to strict regulations in production and transportation and to rigid inspection. Laws and ordinances make it incumbent on dairy cooperatives to comply rigorously with basic health programs.

In each of the eighty-six member associations and the hundreds of submember associations there are well defined departments. The membership service department employs regular visitors to the farms of the individual milk producers. Their duties are to help individual farmers maintain quality production and farm sanitation. If anything goes wrong and an individual producer's milk falls below the prescribed standards, the field man is the trouble shooter. The field man's attention is directed to the utensils, the milk house and the barn equipment and the physical handling of the milk. It extends also to the herd. An association may have a full time veterinarian on its staff, or its field men may work with state, county or private veterinarians.

Membership service departments also advise and assist members through bulletins, motion pictures and meetings directed toward practical procedures in producing top quality dairy products. The purpose of membership services is twofold: (1) to assure the urban consumers of dairy products which meet or exceed the standards of quality set by local regulations and ordinances and (2) to assist the farmer member in meeting or exceeding these standards so that his milk and cream will net him a satisfactory return.

Dairy cooperatives place a great deal of emphasis on programs for quality production and farm sanitation. A questionnaire survey shows that these programs account for 96 per cent of the field staff's time. One of our larger organizations reports fifty-five dairy servicemen and thirty-four area managers.

Perhaps the most significant point to be derived from these and similar reports is the fact that where a rural health problem exists and where a plan is laid out to meet it, dairy farmers tackle it with a vengeance. They will go ahead on other rural health programs as they recognize the need, and as they clearly see the way toward accomplishment. The dairy farmer and his family have become health conscious, have learned the technics of farm sanitation and recognize the importance of disease-free herds. They know that although urban milk consumers are protected by milk pasteurization from bovine tuberculosis and brucellosis, they themselves are subject to bovine diseases communicable to man from drinking unpasteurized milk or from contact with diseased animals. They see the need for an all-out job in this direction.

Our questionnaire shows a wide support by dairy cooperatives of Farm Safety Week—by publicity, by articles, by posters, by efforts of field men, by contributions to the cost of advertisements in newspapers, and so on. Need and desirability of accident prevention has been recognized. The equally essential step has been the supplying of material by the National Safety Council.

In group hospitalization and health insurance projects large cooperative creameries and branches of large scale dairy cooperatives are probably the largest single group of cooperatives enrolled in Blue Cross. One of the large regional dairy associations, the Farm Credit Administration reports, has a program of hospital insurance with a commercial insurance company covering some 12,000 persons. These programs have been patterned so that they can be adopted and adapted by local rural groups.

Dairy cooperatives also promote and work with local health units, local health councils, and cooperative hospitals. They serve on local health boards. Others are members of hospital advisory councils. They support state and national legislation directed toward rural health programs.

While all dairy cooperatives are interested in some types of health program they are not all currently active in all phases of the broad rural health program. It is here that the local groups should be able to call upon the national organizations for assistance. The obligation of the National Cooperative Milk Producers Federation, the American Medical Association, and the general farm organizations is to ascertain and make available the patterns which can be most universally adapted to local rural health needs.

Today the health program of the National Cooperative Milk Producers Federation at the state and local levels is the sum total of the day to day and the month to month activities of its eighty-six members. Specific projects include:

(1) maintenance of quality milk production and farm sanitation; (2) elimination of bovine diseases, including those communicable to man; (3) participation in Blue Cross and other group hospitalization and health insurance plans; (4) quarantine insurance plans under which members are reimbursed for milk which is barred from shipment because of quarantine; (5) participation in Farm Safety Week; (6) promotion of soil-building programs, and (7) support of state and national legislation directed toward the elimination of animal diseases and the promotion of rural health programs.

The National Cooperative Milk Producers Federation on the national level recommended (1) the encouragement of prepaid medical, hospital and dental care on a voluntary basis, (2) federal

aid to improve health standards through health education and research, (3) an expanding school lunch program and (4) support of federal-state programs for the control and eradication of bovine diseases.

CHAIRMAN CROCKETT. Mr. Joseph Fichter, master of the Ohio State Grange, Columbus, Ohio, will give us the health program of the National Grange.

Health Program of the National Grange

MR. JOSEPH W. FICHTER, Columbus, Ohio: The health program of the National Grange started about five or six years ago in an active way. The first unusual interest manifested by the National Grange was the result of a committee study and report in November 1943. As a result of that report, the organization worked out a stand on health in the form of resolutions. Since that time each succeeding year has seen resolutions adopted based on those of the previous year. Our farm people through their organizations are giving attention to the whole matter of health.

About five years ago a committee was appointed known as an interim health committee to carry out some of the things that were decided on at the annual session and to give thought to recommendations at the succeeding sessions. A committee of national scale was considered insufficient unless committees were established in state, county and local units. The organization appointed such committees. Not all the local units in the Grange throughout the nation have a health committee, but there are a large number.

Health committees have taken over the duties of our home economics committees. The home economics committees previously had health and nutrition as part of their task. It was felt, however, that the matter of health is so important that there ought to be a committee especially for that work.

We have meetings of our local granges every two weeks. During these meetings we have an educational program along with the business meeting, and the health committee presents something that ought to be discussed. Certain suggestions are made that arise in our national committee.

Last year we emphasized consideration of cancer and tuberculosis. This year we are going to include heart disease and mental health.

That is a broad outline of some of the things that we are doing in those fields. Increased emphasis needs to be given to the matter of diet and nutrition. If we get that we shall be able to save much money in all of the things that go to cure illness.

I should like to give you a summary of the action that was taken at our last National Grange Convention on the policy in rural health. Rural people should share fully in the benefits of modern medical science regardless of their economic status, race or geographic location, and to that end we recommend and are working for the improved accessibility and quality of hospital and medical facilities in rural areas with an increased number of well trained physicians in rural areas and a medical cost payment system which will enable all people to secure modern medical care without undue burden. Rural citizenry must be informed as to what constitutes adequate medical care and informed how it can best be secured. Adequate public health services and increased research in the various fields of health are necessary.

All the farm organizations feel that there is a shortage of doctors and health workers in rural communities. Yesterday we had the experience of having representatives from two of the groups, one of them from the Council on Medical Education and Hospitals of your Association and the other a representative of the Association of American Medical Colleges, who met with our rural health conference to bring to us the work that the Medical Association has done to increase the number of doctors and health workers in rural areas. We did not get the answer to the questions, but out of the discussion came this conclusion—that all of us in all of the fields lack information that needs to be supplied.

This experience we had yesterday is an indication of the value that can be obtained from constructive and mutual conferring as exemplified by this meeting today.

Health Program of North Dakota Farmers Union

MRS. LULU EVANSON, Director of Education, Jamestown, N. D.: I will speak first on the national farm picture. We are working for a department of human resources, a secretary of human resources with cabinet standing, such as the Secretary of Agriculture, Labor or State. We spend millions every year for healthier animals and healthier lands, and we believe human beings should have the same consideration. We believe that insurance in health is necessary. We believe that it should contain the compulsory feature, just as we believe in compulsory education for our children.

We believe in the free choice of doctors and certainly that the doctors shall have a free choice of patients. We will continue to fight for local control of this program and that this national program shall provide for voluntary health programs.

We believe we should have scholarships, particularly for young men and women from rural areas who are unable to provide the money for education. We believe in federal aid for medical colleges so that they can provide training for more doctors, dentists, nurses and technicians. We should like to see changes in the Hill-Burton Bill, Hospital Construction Law No. 725. We should like to see eliminated the insistence that construction be let out on contract. We find in North Dakota that under contracts, cost of hospital construction is prohibitive.

In South Dakota they built a modern, up-to-date, eighteen bed hospital for $47,000. The same hospital in North Dakota, under contract and under the government program, will cost us from $285,000 to $300,000. If the people wish to donate labor it should be considered in the program; it cannot be under the present law.

Public health units are basic to a health program, and so we will continue to work for complete public health coverage not only for rural people but for the people in the small towns, for complete coverage in America.

We believe in our health workshops; we believe it is a way to get our people together with competent consultants at hand to study their health needs and to provide ways and means of meeting these needs.

We feel that environmental sanitation is vital in rural areas where so little has been done. We are asking for R. E. A. so that with electricity we may have modern facilities and sanitation.

One of the most vital steps forward is the preparation now of a study text on the relation of soil, plants and the general health of people. We have a triangle health plan—hospital, surgical and death benefits. We are developing a pilot cooperative clinic and hospital program to provide complete services for the insured under the triangle plan. We will continue our health education work, for we know that the welfare and security of the nation are tied closely to the health and welfare of its people.

CHAIRMAN CROCKETT: Mr. H. E. Slusher, Chairman, Medical Care Committee, will give us the Farm Bureau program.

Health Program of American Farm Bureau Federation

MR. H. E. SLUSHER, Jefferson City, Mo.: The American Farm Bureau Federation held its thirtieth annual meeting in December 1948. The Bureau has a definite rural health program.

These are extracts from the 1948 resolution: Unfortunately, American medical service at its best reaches only a relatively small part of the rural areas of the country. The primary factors which most influence adequate medical facilities and which attract physicians are community environment and economic opportunity.

Rural people must first know their existing facilities and whether or not they are adequate. They must know the meaning of high standards in hospital and medical care. They must be taught the advantages of budgeting the costs of medical need as they do other household expenses. They must know the significance of health hazards around the farm home as they pertain to disease, including the relationship between animal diseases and human health. They must discover their own health needs and formulate their own program.

State farm bureaus must give serious consideration to the desirability and possibility of offering scholarships whereby physicians, surgeons, dentists and nurses will be encouraged to establish themselves in rural areas. We believe the problem of improved health can best be met by the voluntary organization of cooperative health associations which will encourage people to take advantage of the services available for any medical or dental care which they may require.

We favor voluntary plans providing medical, health, dental and hospital insurance. We urge that facilities of medical schools be expanded, and every effort be made otherwise to train more physicians, surgeons, dentists, nurses, technicians and general practitioners and public health doctors. We recommend the full cooperation of rural people with our established health units and existing health programs, including immunization, clinics, nutrition courses and home nursing. Greater emphasis should be given to preventive medicine. To the extent federal grants are needed by way of assistance, such grants should be made to states on the basis of need, with state governments responsible for the allocation and administration of these funds.

In the administration of the Hill-Burton Hospital Act and other similar acts, agriculture must have adequate representation on national and state advisory councils.

The health program of the American Farm Bureau Federation has been, first, education. Education means an awareness on the part of the individual that there is really a health problem. Cooperation with the medical profession has always been encouraged. State and county health councils have been organized. Cooperation in every way possible has been given to the state health departments.

Through the publicity department of the American Farm Bureau Federation and of the various state federations, support is given to the American Red Cross National Blood Program, Cancer, Tuberculosis, Venereal Disease, Poliomyelitis, Crippled Children, Heart and Rheumatic Fever programs.

Many of our state farm bureaus maintain full time health directors who cooperate actively with all state health groups. The bureaus sponsor Blue Cross hospital and Blue Shield medical-surgical programs. A few states have their own health insurance programs which are a part of their regular life insurance program. All of these programs are tied into the education activities of the organization.

The second step in the program is legislation. We suggest national legislation to help finance county hospitals and county health units on the basis of need. We feel that such programs should be on the basis of grants-in-aid and with a minimum of federal control. At the state level we assist in getting necessary enabling legislation passed to meet the requirements of the national legislation.

We have not recognized the need for or feasibility of a national compulsory health insurance program. Experience of such programs in England, Austria and Germany indicates that they have in no way solved the health problem. Such programs have aggravated the problem. The service and quality of medical care is much poorer than before the plan was put into effect. The integrity of the physicians is of a low standard, and medical service costs are extremely high in comparison with services rendered. Under such programs there can be no such thing as health insurance, and it is wrong in every sense of the word to tell the public that there will be.

The American Farm Bureau Federation still believes in the philosophy that the greatness of this country rests on the willingness of the individual to cooperate with his neighbor to find the solution to all his social and economic problems; that government should be for the people and not people "pawns" of the government.

CHAIRMAN CROCKETT: We will now proceed to the next subject on our program, "A State Rural Health Committee in Action," by Dr. DeTar, of the Committee on Rural Health, Michigan State Medical Society.

A State Rural Health Committee in Action

DR. J. S. DETAR, Milan, Mich.: The paramount reasons for action by a state rural health committee are the same as similar action on a national level: disease among rural people, faulty nutrition, inadequate immunization, supply of hospitals and doctors, the high rate of mortality caused by accidents, the need for health education and the need of rural people to protect themselves against the financial hazards occasioned by sickness and hospitalization.

The need for action on the state level is of far greater importance than on the national level. And the need for action on the local community level outweighs the need on the state level. Until the rural people of America, including the farmers, the laborers, the civic leaders and the doctors, become sufficiently aware of the need for cooperative action on the local level it will be impossible for any action on a national and state scale to fulfill its purpose. Community health councils require and should have state leadership. The state health councils require and are getting help and guidance from this and the preceding three National Conferences on Rural Health.

Two years ago at the close of the meeting, a half a dozen persons from Michigan decided to plan a state rural health conference modeled after this meeting. Twenty state organizations were invited to participate. We asked the state medical society to finance the program. Two thousand dollars was appropriated for the first state rural health conference.

The Conference.—The first state rural health conference was held at the state capital. Sponsors included farm organizations, medical societies, universities, educational associations, health departments, pharmaceutical and nurses' groups, crippled children's and cancer societies, parents and teachers. The program included presentation of the health problems of rural people including hospital facilities, the problem of attracting physicians to rural areas, the financing of health programs, the need for nurses, the need for medical associates for a greater spread of the benefits of scientific advance, and the need for measuring more accurately the exact health needs of rural areas.

Preparation and execution of the program were done largely by the medical society. Conference talks and discussion were therefore slanted to the medical point of view. Physician participation overshadowed that of other groups. Every effort was made to provide multilateral participation, and the expression of opinion was stimulating. The main resolutions adopted by that first conference were: (1) a scholarship fund for medical students who would agree to practice in rural areas; (2) increased appropriations for our medical schools; (3) more local community health councils; (4) nurse recruitment among 4-H Club members, with assistance from local organizations, and (5) another conference the next year. This expression of opinion from three hundred persons from all over the state called for action.

Action.—1. Scholarships for Medical Students: A special fund was set up in a separate corporation called "The Michigan Foundation for Medical and Health Education." This foundation receives donations from all possible sources for educational purposes. To date, over $100,000 has been contributed to the foundation. Scholarships have been announced with provisions requiring practice in rural areas, similar to those in many other states. Opportunities and advantages of rural practice were presented by outstanding family physicians from small communities to medical students. Doctors who asked for information about rural areas were given a complete list of towns requesting physicians. Towns were informed of available doctors and their qualifications. To date, many additional physicians have settled in the rural areas of Michigan.

2. Increased Appropriations to Medical Schools: The legislature was persuaded to appropriate over $1,000,000 for a new maternity hospital at the University of Michigan. A committee was appointed by the state medical society to cooperate with the deans of the medical schools toward providing additional facilities and instruction.

3. More Local Community Health Councils: A local community health council in which farmers, and teachers and doctors and health specialists, could pool their efforts on a local level constituted the real essence of the problem. A State Health Council, with membership consisting of all state organizations interested in health, was organized. A board of trustees was elected. Twenty-two thousand, five hundred dollars was supplied by the state medical society and the Michigan Medical Service (Blue Shield) and Michigan Hospital Service (Blue Cross). An executive secretary was selected last month, offices were set up and work is progressing. The duties of the full time executive secretary will be to coordinate the work on a state level and assist local communities in the formation of their local community health councils which will have representation in the State Health Council. It appears that the results will justify the effort expended.

4. Nurse Recruitment: The aid of the woman's auxiliary of the state medical society was enlisted. A new committee of the state medical society called The Commission on Health Care was asked to investigate not only the need for nurses, but for associates of the physician in all fields, including the fields of dietetics, pharmacy, medical technology, physical therapy, roentgen technology and twenty-one other vocations associated with the practice of medicine. Eight thousand dollars was spent in this investigation and recruitment. Brochures were distributed to high schools, colleges and other interested educational organizations by the woman's auxiliary entitled "Planning Your Career as a Medical Associate."

5. The Second Rural Health Conference: This was held last September. More farm leaders served as panel discussants. The state health department participated freely. The sponsoring organizations list grew to forty-one. The conference was broken down into sixteen discussion groups, each treating a specific health problem such as community health councils, disease control, mental health, dental care, child guidance clinics, hospital construction, aid to medically indigent and health planning. The utilization of these small groups was found to be provocative of much freer discussion and expression of ideas. Thus, from just the spark of an idea two years ago, the annual State Rural Health Conference has grown to be a required institution fulfilling a real demand.

Other Results.—Action resulting from the first State Rural Health Conference was a determination developed by the people of one small rural community to build their own community health center in an endeavor to attract a new

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doctor to replace their recently retired 80 year old practitioner. This building will have offices for a physician and a dentist and a room for the county health nurse. It was completed entirely by local subscription of funds, without financial aid from any governmental agency or any medical organization. This community, on its own initiative, has undertaken to solve its own problem. This is as it should be.

How Great is the Rural Medical Need?—We could not answer this question, and decided to seek an honest answer, reached through investigation carried on in a scientific manner by an absolutely impartial observer. The Section on Sociology and Anthropology and the Social Research Service of the Michigan State College offered to cooperate. A research technic known as the "Symptoms Approach" was used. A carefully selected list of symptoms for which a doctor usually looks in taking a medical history are listed in nonmedical terms so that a person of nonmedical training, if carefully instructed, can obtain the desired information. Graduate students were employed to conduct interviews in one thousand households throughout the state. This part of the research has been completed. All findings are recorded on punch cards. When our study is complete, we will know how much difference there is between the need for medical services in the rural and the urban portions of our population. We will know what people like and what they dislike in their doctors. We will know what they think of their hospital attention. We will know where the need for medical attention is most urgent. A surprising percentage (about 70 per cent) have never heard of "socialized medicine." The survey is based on the assumption that the producers and the consumers of medical services can be most successful in their efforts to improve rural health if strictly scientific procedures are employed in determining the attitudes of the people and if the findings are publicized to both doctors and patients when the studies are completed. The study has cost over $12,000 thus far. We believe that this study when completed will prove of great scientific and sociologic value.

Information to Rural People.—During the past two years we have released 13,000 separate broadcasts over twenty-six different stations. There is no rural or urban area in the state which is not covered. These broadcasts are daily, five minutes long, and are devoted to scientific subjects of current interest. They are prepared and broadcast by a nationally known commentator in layman's words, and are checked for accuracy by doctors of medicine. We have spent $46,000 during the past two years in their preparation, but we have enjoyed the use of $240,000 worth of radio time, the balance being contributed in the public interest by the radio stations or commercial sponsors. Over 500,000 informational pamphlets have been distributed. A motion picture, "Lucky Junior," was prepared illustrating the advantages that the child of today enjoys over his parents, with emphasis on immunization. This picture cost $15,000, but it is being shown in four hundred commercial theaters.

Rheumatic Fever: Thirty rheumatic fever detection centers were organized, covering all sections of the state, to serve as diagnostic aids to referring physicians. A full time coordinator, a doctor of medicine, is in charge of this program. Over 4,000 patients have been referred to these centers by over five hundred doctors, and returned to the referring physician with consultation advice. The rheumatic fever budget is $55,000 this year.

Enrolment in Voluntary Prepayment Insurance.—Believing that voluntary prepayment insurance for hospital and medical costs constitutes the chief answer to the greatest problem in the medico-economic field for rural people, our Rural Health Committee requested opportunity for the rural people to enrol in our Blue Cross, Blue Shield insurance plans as individuals in communities, as well as in employed groups. Five hundred and eighty-three Farm Bureau groups and fifty-two Grange groups are now enrolled in Blue Cross, Blue Shield, in two-thirds of our counties. Total enrolment in Blue Cross has risen to 1,500,000 persons in the state. Blue Shield is not far behind, with over 1,300,000. The monthly expenditure in behalf of the subscribers by Blue Cross and Blue Shield is averaging $2,250,000, or $27,000,000 a year. The Blue Cross and Blue Shield are presently developing a statewide enrolment campaign during which any person in the entire state may secure prepayment insurance, thus obviating the chief objection to this type of insurance. One can visualize the time when the entire population of the United States, barring those on relief, may have voluntary prepayment insurance, covering the cost of hospitalization, surgery and obstetrics.

Summary.—In summarizing the activities of the Rural Health Committee in the one state about which I am able to speak, we have tried to meet and recognize the problems involved in the medical needs of rural people. We are aiming at their solution. We realize that we are far from our goal. To date we have instituted action in nine fields.

Such a program costs money, but we believe that medical societies and other organizations interested in the health of rural people should be willing to raise and spend funds—on their own initiative—for a cause which is obviously for the betterment of rural people.

When the rural people of America become sufficiently interested in their own problems to spend their own time, their own efforts and their own money to attempt to solve their own problems, without delegating that task to authority by remote control, we shall have more hope for the future.

CHAIRMAN CROCKETT: The next paper will be "Animal Diseases Affecting Human Beings," by Dr. H. B. Mulholland, of the Committee on Rural Health.

Animal Diseases Affecting Human Beings

DR. H. B. MULHOLLAND, Charlottesville, Va.: No attempt will be made to cover all the diseases occurring in animals which may be transmitted to man, nor will the field of diseases where animals may act as carriers or host be comprehensively covered. The most important conditions in both categories will be reviewed and measures outlined for their control, with emphasis on the necessity of close cooperation of physicians, veterinarians and farmers in decreasing and eradicating these various scourges.

Bovine tuberculosis will be reviewed as an example of the results obtained by cooperation between government, farmers and doctors. This type of the tubercle bacillus is of minor importance in causing tuberculosis in human beings in this country because of rigid control measures in cattle, whereas in European countries with less control a significant number of cases result from contact with the bovine type of organism.

Such diseases as equine encephalitis, rabies and tetanus constitute a group to which the rural population is constantly though infrequently exposed, and constant vigilance must be maintained in order that their spread be minimized.

Of interest is the type of influenza found in swine. Never described before the great 1918-1919 epidemic of influenza, the possibility of the human virus of influenza plus the influenza bacillus being carried over to swine is an intriguing theory.

In many rural areas, particularly those of the South, tularemia is of major importance in causing serious illness in human beings. While the wild rabbit is the principal vector, many other species have been known to carry the disease to human beings. Similarly, Rocky Mountain spotted fever may be a serious disease in many rural districts and, like tularemia, may be carried by many vectors other than the wood tick. Methods of control and treatment have advanced, and the discovery of new antibiotics seems of great import in their cure.

Ornithosis, an interesting disease of virus origin closely related to psittacosis, is found frequently in rural sections. The virus has its habitat in pigeons and barnyard fowl; a recent epidemic was found to originate in Long Island ducks. This disease may become of major importance to farmers. Fortunately, it is mild and responds to penicillin.

"Q" fever, first described in Australia, has broken out in this country, and is associated with the handling of cattle, being transmitted by ticks.

Brucellosis, more familiar to the farmer as undulant fever, caused by organisms causing contagious abortion in cattle, still remains one of the foremost problems in medicine today, causing untold suffering and economic loss both in cattle and swine and in human beings. The measures adopted for control of bovine tuberculosis have not proved satisfactory in lessening the incidence of this infection. Vaccination with type 19 is of value and isolation of infected swine helps. Unless the latest antibiotic, aureomycin, proves effective, the treatment of chronic human infection is discouraging.

Education of farm people in the fundamentals of transmission of these diseases in animals and man is paramount, and constant vigilance must be maintained, even though some of them are seemingly well under control, else they will break out afresh.

Liaison between the medical profession, farmers, veterinarians and government agencies must be continued in our attack on these and other diseases.

CHAIRMAN CROCKETT: The next paper will be "Environmental Hygiene," by Dr. Ernest L. Stebbins, professor of public health, Johns Hopkins University.

Environmental Hygiene

DR. ERNEST L. STEBBINS, Baltimore: Healthful living depends on man's ability to accommodate himself to the many and varied factors in his environment. We are inclined to think primarily of physical environment as it relates to health, but it is becoming more and more evident that we must be concerned also with our social environment and its relationship to health. Health, as it was defined in the preamble to the constitution of the World Health Organization, is complete physical, mental and social well-being. This is a much broader definition than we are accustomed to and certainly our knowledge of the effect of environment on health is limited, primarily to our physical environment.

Man has struggled with his environment since the beginning of the human race and has found it possible to adjust himself to a wide variety of environments. In fact, there are few areas on the face of the earth where man cannot adjust himself to his environment sufficiently to live in a reasonably healthy state at least for temporary periods. Man has tended to settle in those areas in which environmental factors were most favorable to his healthy existence. This has not always resulted in the ultimate improvement of his condition. The concentration of population in the more desirable parts of the earth's surface may create new environmental hazards; in fact, the vast majority of environmental hazards in a civilized country are produced by man himself. This has necessitated setting up a program of environmental hygiene.

Housing.—One of civilized man's first interests is the provision for shelter against the elements. The type of shelter that he provides has a definite bearing on his health, even though it is extremely difficult to demonstrate a specific health hazard resulting from poor housing largely because of the association of other environmental hazards with poor housing. One of the greatest environmental hazards of poor housing is overcrowding. Another less frequently recognized hazard of poor housing is the frequency of accidents. Good housing should provide safeguards against these accidents.

Water and Sewage.—Most frequently transmitted by water are typhoid and diarrhea or dysentery. Prevention of the spread of these diseases by water requires either that the supply of water be amply protected against pollution by human wastes or that it be purified. In rural communities, individual water supplies cannot readily be purified by filtration or chlorination; therefore reliance must be placed on measures to prevent pollution of such supplies. In rural communities the majority of households are supplied with water from a well. The location of the well in relationship to the disposal of sewage or other human wastes is obviously of great importance. Not infrequently the planning for the location of wells and the disposal of human wastes requires technical knowledge and skill. The type of well and the type of sewage disposal that best fit a given location may require extensive study and knowledge. A properly organized local health department should be equipped to provide consultation and help to the home owner or builder and to provide assurance that the disposal of human wastes will be such that they will not endanger the home owner's own water supply or that of others. It is entirely possible to eliminate completely the environmental hazard of contaminated water, but, unfortunately, every year many residents of this country suffer from water-borne disease.

Food Supply.—Another essential factor in any environment is an adequate food supply, but food, also, may be a transmitter of disease. One of the most important foods and one which is particularly liable to transmit disease is milk. This may constitute an environmental hazard if the cows from which the milk is obtained are suffering from diseases that may be transmitted to man, or if the milk is so handled that it may be contaminated by human beings suffering from a disease transmissible through milk. The two diseases of cows most frequently transmitted to man are bovine tuberculosis and undulant fever. Both of these diseases have real economic significance to the farmer as well as representing a serious health hazard, but by the use of simple tests for the detection of these diseases and by the elimination of infected members of herds the rate of transmission to man has been greatly reduced and economic loss lessened. Milk from cows not known to be free from infection must be pasteurized in order to be safe or, if that is impracticable, boiled.

Not infrequently, certain infections of man may be transmitted to cows. Important among these are the streptococcic infections. This type of organism may be transmitted from the milker to the cow, producing disease in the cow that may not be apparent but which in turn may be transmitted to man through the milk. Constant vigilance on the part of the milker is necessary to detect such infections and avoid the possibility of transmission to man.

A serious but fortunately rare hazard in connection with food consumption is the disease known as botulism, a highly fatal disease contracted by eating food which has been contaminated with the organism and improperly canned. Prevention of botulism is largely a matter of education of housewives concerning the proper methods of home canning of foods. The organism is destroyed by proper heating, and safe methods of home canning have been devised.

Food may be contaminated with a variety of organisms which produce toxins or poisons if the food is kept for some time after cooking and is not properly refrigerated. Many of the common diarrheas result from this type of contamination of food. Prevention of these common diarrheas is accomplished primarily through the proper handling and refrigeration of foods not consumed promptly after cooking. It has been found to be a dangerous practice to leave unrefrigerated any foods that may have been handled subsequent to cooking.

A specific health hazard is involved in the eating of pork if not sufficiently cooked. Trichinosis is a food infestation transmitted to man by the eating of infested pork that has not been sufficiently cooked. It is not a highly fatal disease but produces a great deal of discomfort and disability. It can be readily prevented by thorough cooking of all pork.

Other Hazards.—There are other hazards in the environment of certain parts of the rural areas of the United States. One of the most interesting of these is Rocky Mountain spotted fever. It is known to have a rather wide distribution throughout the United States and is transmitted to human beings through the bite of a tick. The best means of avoiding this disease is to avoid tick-infested areas. A special vaccine has been developed which has been shown to be effective in preventing the disease.

Tularemia may be a hazard in the environment. Infection of man results from the handling of infected rabbits or other rodents or through the bite of a tick, flea or other insect which has been in contact with an infected animal. This disease may be avoided by keeping away from rabbits in infested areas or by careful handling of rabbits. Persons whose occupation requires that they handle rabbits that may be or may become infected should be protected by a vaccine.

One of the greatest hazards in the environment, particularly in the Southern states, is malaria. The prevention of malaria is such an extremely complex problem that it would be impossible to discuss it in this short period of time.

Our Nonphysical or Social Environment and Its Relation to Health.—It has been increasingly apparent that the sharp differentiation between physical illness and mental illness, which has so long been maintained, cannot be justified. The frequency of psychologic causes for disability often presumed to be physical has resulted in a new approach to medical problems, taking into consideration the psychologic and family background as well as the physical background of the individual patient. This has been called psychosomatic medicine. Moreover, it has been shown that many of the behavior problems of children, which all too frequently lead to definite mental disease, are preventable. There is growing evidence that the social environment, particularly the family environment, has a great influence on psychologic development. Our knowledge of this field is admittedly limited, but efforts are being made to recognize hazards in the social environment and to provide safeguards against these environmental hazards. Many health departments are now undertaking to develop safeguards against these hazards through the establishment of mental hygiene clinics for the diagnosis of the defects in the social environment and to provide simple means of preventing serious damage resulting from these social environmental hazards.

Mental hygiene has been defined as a technic which aids the individual in securing satisfactory mental and emotional adjustment to his environment. The evidences of hazards in the social environment may appear early—the so-called problem child is usually one with a behavior problem, one who has temper tantrums, does not get along well with other children or, in extreme cases, may show early signs of delinquency. Such a child may have a hazard in his social environment. Most frequently, this is not a problem of the child himself so much as it is a problem of his parents. There have been some most encouraging results where these problems were recognized early and through psychotherapy, particularly with parents, the cause of these difficulties has been removed. Not infrequently in the adolescent child more serious difficulties are encountered, leading to juvenile delinquency or mental disease. Careful study of such cases has led to the belief that a large proportion of those involved are subject to emotional or social environmental stresses with which they are unable to cope. Here again much of this is due to failure on the part of the parents to understand the child's

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problem. Often these problems of the social environment are also associated with some physical disability. There seems to be a great prospect for future accomplishment through the mental hygiene movement, eliminating many of the hazards of the social environment.

With few exceptions, in discussing the problems of our physical and social environment, the place of the health department in meeting these needs has been obvious. In meeting the needs of environmental hygiene, whether physical or social environment, the need for a well organized, functioning health department should be apparent. The extension of full time local health departments to that part of the nation not now served is imperative if we are to solve the problems of our environment.

Nutrition and the Soil

After a short recess Dr. Carl S. Mundy, vice chairman, introduced the next speaker, Mr. Glen W. Bunting, Manager of the Central Farmers Fertilizer Company, Chicago.

MR. G. W. BUNTING, Chicago: Comparing daily newspapers of fifty year ago with those of today reveals some interesting similarities; accidents, then and now, especially sudden disaster, are prime news. Fifty years ago the daily newspapers in Chicago gave no indication that food and health had any relationship—at least a casual checking of old papers does not reveal any public interest in the subject.

The actual problem of proper nutrition may not be materially different, but the ease of transportation has allowed many persons to make observations that stimulate their thinking on the subject. Driving through the northern counties in Florida, especially off the main highways, one is impressed by the sight of starving cattle walking in lush-appearing vegetation but lacking in the necessary minerals to give health. The rural people who produce most of their food from these infertile, sandy fields plainly indicate that malnutrition is not limited to Greece, China or India.

For purpose of contrast, let your mind travel into the semiarid West where vegetation is sparse but the cattle are in good flesh, with a healthy coat of hair and appear to reflect the optimum of proper nutritional diet. Likewise, the health of the rural people of that area reflects a better nutritional diet.

Dr. Abbott and associates found up to 85.2 per cent of rural school children (age 6 to 10) in Florida in 1939 were anemic, whereas a study by Wiehl and Kruse in 1941 found only 1.5 per cent anemic among 336 private school children in New York. It is apparent that proper proportions of iron, copper and cobalt are lacking in the daily diet of the children in rural areas of Florida.

A recent study by J. E. Steckel of Purdue reveals a widespread area in Northern Indiana where crops show definite starvation for manganese.

Cobalt, iodine, manganese and copper have been found necessary for control of the death losses of sheep in Northern Wisconsin. Is it not reasonable to assume that the health of rural people in the same area is affected by the same mineral deficiencies?

VICE CHAIRMAN MUNDY: Our next paper, "Health Education and Community Responsibility," is by Mr. Aubrey Gates, Associate Director of Cooperative Extension Work, College of Agriculture, University of Arkansas.

Health Education and Community Responsibility

MR. AUBREY D. GATES, Little Rock, Ark.: The object of the National Conference on Rural Health is to bring to rural America the kind of health service needed and desired in a manner that is in keeping with American ideals. The approach is necessarily through health education and community responsibility. Moreover, the approach is necessarily a program of action if any sort of solution is to be reached.

Health education and community responsibility are rather broad terms. There are two big educational jobs to be done in the field of health education. One is with the lay public. They must be made to realize what they can expect and what they can do both as individuals and as communities. We must take the lead, and everyone else must help. The other big job is with the medical profession. Each group must keep in a position to counsel and advise the other—but never to dominate and dictate.

An advisory committee was set up composed of representatives of the medical society, hospital association, University of Arkansas Medical School, state health department, the Arkansas Farm Bureau Federation and home demonstration clubs. We find that the whole problem of health education in a community is bringing together diverse interests in the whole undertaking; reaching an agreement, and developing a program along lines that will lead to ultimate solutions.

Adequate medical and hospital care will come as a result of study and discussion and of compromise. We have a great body of factual information, it is true. But health education is not an exact science and must be tempered by judgments and practical application.

Conferences on rural health have set the pattern for people to come together to discuss openly what they should do to provide their own needs and find ways of solving their own problems. If a satisfactory program for rural health facilities is not worked out by the people themselves—both the lay and the professional groups, it is a fairly safe assumption that one will be developed by an Act of Congress to be administered by the federal government. To me this is socialized medical care of the worst sort.

Our best argument against a legislatively provided medical service is the lack of information on what is needed by or acceptable to the people. Regardless of how well science and technology are developed, it is public understanding and continued practice that count. If medical service can be made available only by act of the national Congress, it is my opinion that we have made the first step toward completely controlled social and economic life and will have given up the right to take free action in this country.

Rural people know that something needs to be done for better health facilities. The medical profession surely knows that such a problem exists. The difficulty, it seems, is that we do not know where to take hold, or some of us are unwilling to do so.

Many advances are easy to overlook when we get into the heat of discussion of what we are going to do. But stop and think. The life span has been increased; twenty-five years ago it was only 35 years. Now it is 65. That did not just happen, and all of us know the reasons for it. The public's knowledge of sanitation and disease prevention, the skill and technical advancement of the members of the medical profession and many more things played a part. In the South nutrition, sanitation and disease prevention have been an important part of our extension education and farm organization programs.

For several years the Medical School of the University of Arkansas has been unable to locate a case of pronounced pellagra. Occasionally they find a case of subclinical disease for laboratory observation by the students. That is all. Disappearance of this disease is attributed to the education on nutrition that has been offered in recent years.

Almost everyone working in rural areas has done much on sanitation programs. Typhoid was greatly reduced even before immunization came into use, through safeguarding the water supply and screening against flies.

Much educational work has been done and real progress has been achieved on control of malaria. Recently in the Southern states whole counties have joined together to bring the public health service into homes with DDT spray equipment. The Arkansas Farm Bureau Federation and its affiliated county units have taken the leadership in sponsoring venereal disease clinics, with surprising cooperation and results. Both the state health department and the local physicians whole-heartedly cooperated in handling technical aspects of the clinics.

There have been outstanding successes with tuberculosis clinics, cancer clinics and well child clinics. These were the finest kinds of cooperation based on full understanding. That is the only way that they could have been successful. People have been made to understand fully their purposes, objectives and results in terms of personal and community welfare.

These are controversial questions: How will we meet the need of the "disappeared" rural doctor? How can we get one in his place? How is he to be paid? What kind of workshop can be made available to him? Why can't these questions be worked out like others—merely by bringing the discussion into the open and, through the people concerned, reaching an understanding of what is best to be done.

Much that could be done will not require a long or complicated educational program. For example: In one Southern state 26 per cent of the children born last year were without an attending physician. Yet in that state law does not require midwives to meet any standard. In the near future the state's legislature will probably pass a licensing law for midwives.

We need not stop at doctors and nurses. Laboratory technicians, sanitary engineers, and many other types of workers are needed. These should leave the rural community for training and return there for service. It is our job to show them the opportunity and the challenge. Communities have another responsibility: That of obtaining sufficient appropriations for adequate training facilities so that larger numbers can be enrolled and trained.

In Arkansas about 75 per cent of the hospitals are owned and operated by individual doctors or partnerships of two or more

doctors. It is obvious that the young practitioner has not the financial resources to build and equip even a small plant. Some type of community action must be taken if this problem is to be met.

Developing an over-all hospital program in a state involves endless educational work and great community responsibility. Many of our doctors readily state that they do not want to own a hospital. They own them because they wanted to practice in the rural area but needed the facilities to carry on successfully. They built hospitals and bought the expensive equipment themselves. They said nothing to the public about this responsibility —neither did we. So, over the years rural people have looked on this as the proper and only way to have a hospital. They expected doctors to build hospitals, employ and pay for highly trained personnel, do the managing and all the practicing. All the public expected to do was utilize the service when needed. The whole thing now is too big for the individual doctor to handle along with his practice.

There seems to be a tendency in our section of the country for the general practitioner to give up his hospital and either join the staff of a nearby hospital or encourage the people to build or operate their own. This can be done with the assistance of the federal funds under Public Law 725. Before a state could participate in these federal funds it had to make a survey to show the need of additional hospitals and draw up a plan for a well integrated hospital system. A department of hospitals had to be created within the state government if none existed. These things have been done by all of the states, and all are eligible for federal funds. The principal purpose of the department of hospitals in most states is to supervise construction details and standards and enforce the hospital licensing laws.

The weakness of the program lies in the fact that the construction and operation of a complex institution is being turned over to an untrained and inexperienced public. This must be corrected. There is an urgent need for us to launch a full scale program of educating the community as to its responsibility, in properly incorporating this business institution, getting a board of trustees or governors free from political or personal bias, employing well trained management, avoiding large yearly deficits brought about by inferior management, and taking proper care of necessary operating deficits incurred by non-use. If costly mistakes are to be avoided in this or any other undertaking, we have a responsibility to see that we are working with all the facts we can obtain, in full faith and complete confidence.

VICE CHAIRMAN MUNDY: Our last paper on the program, "The General Practitioner in Rural Practice," is by Dr. Ward Darley, Executive Dean, Health Sciences and Services, University of Colorado School of Medicine, Denver.

The General Practitioner in Rural Practice

DR. WARD DARLEY, M.D., Denver: The National Conference on Rural Health is unique in that its participants represent both the consumers and the providers of medical service.

The increase in medical knowledge during the past twenty years has been phenomenal. Consequently, it should not be surprising that we are experiencing difficulty in translating this knowledge into effective action. The situation is complicated by the fact that the consumer group is well aware of the increased potentiality of medical care and naturally is actively interested in seeing that the best possible care is made more readily available. Many obstacles present themselves as far as the realization of this desire is concerned. The greatest of these are to be found in the uneven distribution of hospitals and diagnostic facilities and in the uneven distribution and actual shortage of physicians and other health service personnel. Further, without attempting to go into controversial details, it must be recognized that changes in our industrial, economic, social and political world are pressing on us from all sides, increasing the tempo of our lives, adding to the confusion of our environment and consequently making clear thinking and sound judgment difficult. All this is having a profound effect on all thinking and activity which is concerned either directly or indirectly with the maintenance of health and management of illness. The result is that there is a wide gap between actual medical knowledge and the type of medical care rendered.

It should be obvious that if progress is being made, a gap between what we know and what we do is bound to exist. The efforts which are being made to narrow this gap are simultaneously creating problems which are adding to our basic difficulties. It is inevitable that, as knowledge accumulates in any field, specialism and segmentation take place. Specialism has made it possible for the individual physician to become particularly adept in some one segment of medical practice and thus to pool his particular ability along with the particular abilities of other physicians to the end that a more effective and better balanced medical care may be made available to the consumer.

While it is true that the acquisition of scientific knowledge and the consequent development of specialism and the need for special equipment and facilities have brought us definite benefits, specialism, segmentation and their consequences are doing much to set aside and dilute the patient-physician relationship—the most important foundation stone of a satisfying type of medical care. In fact, I do not believe that medical care, no matter how superior it may be from the scientific point of view, can be truly effective unless the patient-physician relationship permits the physician to make the maximum use of his own personality as an agent of comfort and therapy. A system of medical care that passes the patient from specialist to specialist, that depends in a large measure on the services of nurses, interns, residents and assistants, that involves technicians and their paraphernalia and that takes the patient away from his home and frequently his community, of necessity becomes impersonal.

Specialism and "hospitalism" are not the only factors that are operating to impersonalize medical service. Good roads and comfortable and rapid means of transportation have influenced doctors to concentrate in localities far removed from many of their patients; the patient therefore must more and more come to the doctor instead of the doctor's going to the patient. This, while doing much to increase the efficiency of our doctors as far as the number of patients that they can see in a day is concerned, is wrecking havoc with the patient-physician relationship because of the necessary cut in time per patient.

The health services in schools, universities, business and industry offer a very impersonal type of medical care. Most health service for the indigent is impersonal in its approach. Finally, I submit that any type of medical care insurance, whether it be voluntary or otherwise, tends to be impersonal because the usual two way patient-physician responsibility is diluted by the entrance of a third party—the insuring agency.

Chancellor Robert M. Hutchins of Chicago University in a recent statement strikes at the core of the situation by saying: "Specialization is essential to the increase of our knowledge. . . . But specialization does not facilitate the comprehension of knowledge: it is not likely to show us the interrelations among facts and ideas in various specialized fields."

Dr. Wingate Johnson, speaking from this platform one year ago, expressed this same idea in more practical terms when he said: "The same factors creating the need for specialists are creating the need for men trained to guide patients through the maze of modern medical care."

If a general physician is to assume the role of a "general manager" in our system of medical care, what is the ideal way in which he might function? Briefly, I feel that he should be in a position to function as a health counselor or coordinator from birth to death. In order to function effectively in this manner he must also be in a position to render preventive, diagnostic and therapeutic services consistent with the average person's average needs.

Medical care of tomorrow will undoubtedly place great stress on the personal as well as the community aspects of preventive medicine. The practice of personal preventive medicine will have comprehensive implications. In addition to the usual immunizations and efforts to instil the commonly accepted principles of personal hygiene, a working understanding of mental hygiene and clinical psychiatry will be essential. I believe that the greatest single challenge in the field of preventive medicine today is in the area of emotional and personality-determined illness. The exertion of intelligent influence on the individual, particularly during the early years of his life, and on the family of which he is a part, can do much to prevent the full blown neurotic conditions which constitute or complicate about 50 per cent of the average physician's practice. The preventive idea must embrace the recognition and adequate treatment of the early neurosis. It is unreasonable to expect psychiatric specialists to care for all of the psychiatric needs of our people. Ideally, the family physician is the one who first will see the average patient needing psychiatric guidance. By virtue of his knowledge of the patient and his environment, he is the one in the best position to render the most effective service. This general physician, however, must be well enough trained to recognize his limitations and thus know when the services of the psychiatric specialist are needed.

Almost all of these remarks can be applied in principle to the relationship of the general physician to the fields of pediatrics and internal medicine. Maximum effectiveness in the early diagnosis of medical and surgical conditions will be essential. This is a large order, particularly if a patient with suspected

disease is to be kept under observation without being subjected to unwarranted anxiety and expense.

What I am saying is that the general physician should be the one to continue at the helm during and after any episode of illness so that he can do his utmost to prevent complications in the home and to prevent relapse, sequel, chronicity or disability in the patient. If chronicity or disability for the patient are inevitable, he should be the one to help the patient and the family to make the most of any remaining assets, develop others and steer the patient to and through a program of rehabilitation.

With the increase in the average life span of our citizens, the medical profession will be called on more and more to cope with the problems of the aged. Here early diagnosis, particularly of malignant or degenerative disease, will deserve diligent consideration. The medical care of the aged will always be complicated by conditions requiring the attention of the physician who has a working knowledge of both psychiatry and medicine. Obviously, the family doctor should be qualified to deal with these problems.

If general physicians are to cope with the preventive, diagnostic and therapeutic aspects of psychiatry, pediatrics, internal medicine and possibly surgery and obstetrics, and at the same time keep themselves in a position so that they can keep their services adjusted to the needs of their individual patients and communities, it should be obvious that their period of training must be just as long, just as expensive and just as carefully planned as that for any of the specialties.

There is much evidence that our general practitioners are already making an effort to rise to the occasion. Their demands for postgraduate opportunities are almost exceeding our ability to supply and their philosophy is rapidly adjusting itself to a broad, positive point of view. I believe that the general practitioner of today can most easily adjust himself to both the needs of today and of the immediate future. In line with this, my contact with general practitioners leads me to feel that they are making an honest effort to recognize their limitations and that their use of specialists is becoming very intelligent and reasonable.

It must be recognized that today many obstacles exist which are detrimental to the effectiveness, sense of security and self respect of our general practitioners. Many of our physicians, some specialists, some general practitioners, feel that the general practitioner is outdated and in time will disappear. Unfortunately, many of our citizens seem to hold the same point of view. I believe that searching thought about the background of American medicine and the things that are essential to a satisfying type of medical care will discourage any one from holding to such convictions. Careful consideration in the right quarters should do away with hospital staff discrimination against the general practitioner. By the same token, such units in our society as the armed forces, Veterans Administration, civil service, insurance companies, industry and medical schools, should cease to use board certification as the chief basis for the grading of its physicians and thereby automatically freezing the relatively lower status of the general practitioner, no matter how capable or effective he may be.

I feel that most of what I have been saying can be taken as applicable to almost any type of community in our country. I believe that a general physician should be the backbone of urban as well as rural practice.

In conclusion, I should like to reiterate: I believe that if the need and desirability of individualized physician-patient and physician-community adjustment is kept in mind, a general physician is the logical one to coordinate our plan of medical care. Further, I believe that a general physician's services should play an important part in the medical services offered to any type of community. If we compare the present relative needs of urban and rural communities, I believe that both the qualitative and quantitative needs of the latter are the greater. And finally, I believe that given a reasonable period of time—time for the construction of facilities and time for the education of personnel—the health needs of our rural communities will be worked out in a substantial and effective manner.

SATURDAY, FEBRUARY 5

CHAIRMAN CROCKETT: The meeting this morning is for the purpose of receiving the reports of the panel sessions of yesterday afternoon. The policy of these conferences has been that no vote is taken. We do not go on record by a vote of any sort as to the opinions expressed by the panels. The panels are independent agencies who have heard the testimony of all of you who cared to contribute, and in turn have gotten together and formulated their conclusions as to the sentiment expressed.

We adopt the general attitude that we confer here and report largely those things which fall within the areas of agreement rather than to spend our time on debatable things which are probably not yet ready to be settled. If we can make a little progress once a year in coming here, gaining better knowledge of each other and of each other's intentions, we are approaching a common working solution to many of our problems.

Section chairmen will be asked in their rotation to come forward and present the findings of their panels, and then there will be a short period for additional remarks but those remarks do not have to be answered.

Committee on Cooperative Health Programs for Rural Areas

MR. CHESTER STARR, Chairman: Our section divided the discussion into two parts: The local health council and the local health unit are so closely associated that they were discussed together; however, we had to make a definition because apparently a number in the conference were somewhat confused as to the difference between the two. A health council is an unofficial voluntary body of a number of persons who come together for the purpose of discussing, surveying and making plans for the improvement of health in the area. The local county unit or department is an official body, often performing a part of the state health department's duties in the state; it is officially charged with certain responsibilities by the state.

From the observations, it would appear that the majority of the people attending the conference thought that the membership in the health council should be voluntary, possibly made up of individuals rather than simply on an organizational basis. It should have something to do. If a health council does not have something to do or, in other words is not built to delve into problems and plan the solution of problems, it soon dies.

This section recommends that the National Conference on Rural Health go on record as urging that every local area establish a voluntary over-all coordinated health agency such as a health council or health committee. It further recommends the complete coverage of the nation with full time local health units in the belief that it is fundamental to the effective functioning of all health programs. This point of view has been set forth by other conferences, notably the House of Delegates of the American Medical Association at its intermin session in St. Louis, the Section on Local Health Units of the National Health Assembly and the National Advisory Committee on Health Units of the National Health Council. One of the primary objectives of a health council may well be the attainment of local health units where they do not exist and the strengthening of existing ones.

This section is in agreement with the present efforts of state and territorial health officers, the National Congress of Parents and Teachers and many other national organizations in supporting, in principle, legislation that is designed to attain the objectives of full time local health units coverage for the nation.

Cooperative Hospitals.—All hospitals other than proprietary hospitals are fundamentally cooperative in character in that they represent the coordinated efforts, both in construction and operation, of the government, health professions, private philanthropy and consumer interests. Regarding this as a reasonable concept of a cooperative hospital, we believe, will lead to less heated discussions and more constructive thinking and effort.

This section recommends that Congress be requested to extend the time of the operation of the Hill-Burton federal aid to ten years and to increase the appropriation from $75,000,000 each year to $150,000,000.

This group further holds that to build hospitals to supply all the nation's people with adequate medical facilities and to eliminate existing shortages, government grants-in-aid are necessary. Teamwork is required between rural and urban people, city, county and federal governments and the health professions.

DISCUSSION

MRS. DORA BARNEY, Oklahoma City, Okla.: I should like clarification on the discussion on the cooperative hospitals. The impression that I got this morning was that perhaps everyone was against cooperative hospitals. I think that the difficulty was that many in the group were confused and associated cooperative hospitals with national health insurance and, putting those two together, were against the cooperative hospitals as well as national health insurance.

MR. EUGENE BUTLER, Dallas, Texas: We have about a dozen cooperative hospitals in Texas, and I believe that they are making a real contribution to the improvement of the rural health problem, and it seems to me that this body is making a serious mistake when it fails to endorse a program of this sort. Local people are getting together to solve their own health prob-

lem. It is about the only possible way that the problem can be solved and, personally, I am much distressed that this group has taken an attitude that there is any connection whatsoever between cooperative hospitals and socialized medicine. I am thoroughly convinced that the cooperative hospital is one step that will prevent what you doctors are pleased to call socialized medicine. It is one way that we can avoid socialized medicine.

DR. JOHN A. FERRELL, Raleigh, N. C.: In the discussion yesterday there was some difference of opinion as to the definition and exact meaning of the so-called cooperative hospital. The Hill-Burton Law makes provision for assistance to publicly owned hospitals and to nonprofit hospitals. If the so-called coordinated hospitals are nonprofit, they would not be excluded. Would it not be in the interest of clearness to indicate, instead of the term cooperative hospital, publicly owned and non-profit, hospitals, as stipulated in the Hill-Burton Law, and for which, in most states, state and federal aid are available?

DR. DEAN A. CLARK, New York: The issue that was discussed in yesterday afternoon's session has not been made entirely clear. The controversy arose over the fact that in a number of places where cooperative hospitals have been attempted physicians who desire to associate themselves with such hospitals have found that they have been frowned on by the medical societies. It was the wish of many of us at the session that the American Medical Association would use its good offices to assist and encourage its state and local constituent societies to accept the cooperative hospital idea and not to discriminate against physicians who chose to participate in such hospitals.

MR. C. C. BAIR, Columbus, Ohio: I represent the Ohio Farm Bureau. The leader of our conference yesterday left the impression that a cooperative hospital, that any hospital could be described as a cooperative hospital because, in almost every case, there is a working together, a joining of government funds, and philanthropic donations and private working funds. Those of us who are in the cooperative would like to challenge that definition of a cooperative. A cooperative, basically, is the application of true democracy to an economic enterprise, which a hospital basically is. You have to have capital and you have to have a board of directors. You have to have management, and the determining factor to us in the cooperative movement is who basically is supplying the capital and, more than that, who governs it. In a true cooperative the people of the community, the consumers, each have one vote and have the right of choosing the management and choosing the staff.

MR. RAY MILLER, California: Mr. Chairman, may I ask you a question? I am a walnut grower from California. What is the definition we are discussing? Is cooperative mentioned specifically in your report or not?

MR. STARR: We did not wish to discriminate in defining hospitals, but we did feel that this should be pointed out, and this is the definition, or rather it is the report submitted.

"All hospitals other than proprietary hospitals are fundamentally cooperative in character in that they represent the coordinated efforts, both in construction and operation, of the government, health professions, private philanthropy and consumer interests."

MR. MILLER: I think that your definition, wherever you got it, is about 75 per cent wrong. Government sponsorship, government control, private philanthropy and so on, all have their place, but they are not a part of what we commonly speak of as cooperatives. A cooperative is not different from the Associated Press and most of us know it. The Associated Press is the greatest cooperative in the world. Cooperatives are definitely a part of the American private enterprise system, and it is one of those things that can keep local control in local communities. It is the direct antithesis of statism.

CHAIRMAN CROCKETT: Each panel chairman will have two minutes to make any explanatory remarks that he wishes.

MR. STARR: We did not think that we would encounter the rather strict definition that some sitting here are thinking when we say the word "cooperative." When we drafted that particular statement, we had in mind setting forth that except for proprietary hospitals and such hospitals as are operated purely by the government, no one benefits from the operation of these hospitals except the consumers. Hospitals do not make money. Most of them run a deficit, and that deficit has to be met by either private subscriptions once or twice a year, by campaigns or, if they are state or county or municipal hospitals, by public taxation. We felt that there was criticism of hospitals such as was mentioned by the gentleman from Texas and that the criticism was coming from people who had actually thought the thing through, that a hospital is for the benefit of the consumer, and other than proprietary hospitals, no one receives any income on any investment that might be made or contributed. It appears that we ran into difficulty possibly because of the jealousy of some groups in defining the word "cooperative." We hoped that our definition would clear the fog around the word and get more persons thinking of the true characteristics of all hospitals other than those operated for proprietary reasons.

Committee on Environmental Hazards

DR. D. G. MILLER, Chairman: Our conference was divided in three parts, and we will give our report in that way.

One of the contributions of the veterinary profession to public health is the control of diseases of animals communicable to man. At present, there are some seventy to eighty known diseases of this type. Additions to this list are being made constantly. Just recently, a member of the staff of Ohio University definitely established that Newcastle's disease in poultry infects human beings.

The veterinary profession takes great pride in the work of reducing the incidence of tuberculosis to less than 0.5 per cent in the cattle population in this country. This means that we have practically eliminated the incidence of tuberculosis of bovine origin in the population in America. However, we must not become too complacent; so long as a vestige of the disease exists, there is a distinct possibility of its again becoming a public health menace. The disease in cattle is on the increase. We cannot, therefore, relax in our program of regular retesting to keep the disease under control.

Brucellosis is perhaps of the greatest importance from the standpoint of public health. This is a disease which affects dairy cattle, swine and goats. The two forms of the disease which are most important from the standpoint of public health are those which affect swine and dairy cattle. The brucellosis of goats has not assumed any great importance in this country, and there have been only a few outbreaks of the disease from goats in the southern part of the United States. Farm people and those drinking unpasteurized milk are the ones most commonly exposed to the disease from cattle; while the swine disease is a result of packing house workers and farm folks handling diseased hogs.

The program of reducing the public health hazard is related to the control of disease in animals. This is directly dependent first of all on a sound educational program to inform the public of the dangers attending this disease in order to stimulate precautions by all the people concerned and the elimination of the disease from the farm herds and flocks. Many with ordinances require pasteurization of milk but allow unpasteurized milk in the use of butter, cheese and ice cream. The program has been held up to some extent as a result of inadequate federal services, which we feel will be corrected in the near future. Regular testing and the elimination of infected animals from all flocks and herds will be an important step in the control of this public health hazard, along with milk ordinances and pasteurization of all milk or milk products consumed by human beings. Perhaps even that fed to farm animals should be pasteurized.

Rabies results in so much anxiety and cost for the administration of prophylactic treatment to the large numbers of persons exposed that it is a serious public health problem. England and the Scandinavian countries have eliminated rabies from their boundaries and have maintained them rabies-free through a program of proper quarantining of dogs. In this country, the work has been hampered by a few misguided persons posing as dog lovers who refuse to have any restrictions placed on the dog. At present, we have all the means at our disposal for controlling this disease through proper quarantining and the vaccination of dogs and could greatly reduce and possibly eliminate the disease from this country. Since it has been established in wild life, a new program aimed at control of this disease should be placed in the hands of the public health groups, Bureau of Animals and the Wild Life Service, cooperating in a program of total eradication.

The second part of our discussion was on farm accidents. There are annually 18,000 accidental deaths among the farm population. Over 25 per cent of the accidental deaths in the United States occur among agricultural workers. The death rate among agricultural workers is exceeded only by the mining and transportation industries; 7,000 of these are caused by traffic accidents, and this number is on the increase. Six thousand, five hundred are home accidents, largely due to falls. Four thousand, five hundred are actually due to the farm work and are accompanied by 225,000 serious injuries each year. A large number of farm accidents have been shown to be caused by a removal of guards and safety devices or a disregard of elemental safety.

Our conference suggests: (1) that this problem may be in part solved by an organization of all the people interested in reducing this number of injuries and deaths to coordinate a farm accident program; (2) that there is a great need for research into the details and patterns of farm accidents so that exact information may be obtained; (3) that we must employ more safety technics, and (4) that we must embark on a comprehensive educational plan including schools, 4-H, the Farm Bureau and the Grange and all similar groups.

The third discussion involved environmental sanitation. In rural United States, statistics show that we have done well with environmental disease control since 1900. Since then, disease rates have levelled off and do not show as strong a downward trend as is desired by public health authorities, physicians and farm leaders.

It is the advice of this group that more emphasis should be placed on research in rural health sanitation problems; development of adequate water supplies and satisfactory means of chlorinating the individual well supply, and coordinating the planning of small villages so that adequate sanitary facilities will be provided. The four fundamental requirements for health and welfare of the people may be itemized as (1) water supply, (2) disposal of excreta, (3) food and (4) housing. It is emphasized that none of these may be obtained if disposal of excreta is inadequate. Chemical measures offer a temporary and poorly accepted substitute for environmental sanitation. If you do not believe that, try to persuade the teacher to stir some sodium hypochlorite solution or some other form of chlorination in her bucket of well water and see how far you get.

Decline in death rates of certain diarrheal diseases is due to better therapy, resulting in a shorter duration of the diseases and decrease in spread of infective fecal material, as well as the improved therapeutic outcome. This we do not feel to be due to the use of DDT, which Mr. Urey would like to make us believe.

DISCUSSION

DR. STUART A. ADLER, Albuquerque, N. M.: I think that we have passed the stage where we take better care of farm animals than we do of our children. We ought to move that up to the point where we are saying that farm people take as good care of their children as they do of their stock. The next time that we meet we may be able to surpass it.

DR. C. H. LERRIGO, Topeka, Kan.: Senator Capper is keenly interested in health matters. The point that I wish to make is that you do not advertise yourselves sufficiently through contribution of articles to your home papers and to your farm papers especially. No doubt this group numbers readers of *Capper's Farmer*, readers of the *Kansas Farmer*, readers of the *Missouri Ruralist*, readers of *Ohio Farmer*, of *Michigan Farmer*, of *Pennsylvania Farmer*. Every one of these papers would welcome this material that you are discussing this morning. Those are things that I think will advance your work tremendously.

CHAIRMAN CROCKETT: I want to thank the doctor for calling attention to the thing that has been often discussed in our committee meetings. It is a hope that sometime we may do our part, at least, by contributing a health column or note or contribution sponsored by this health committee to various farm journals. However, those things are difficult to work up and have acceptable; it is a field of journalism with which we are not too familiar.

Committee on Health Education—Individual and Community Responsibility

DR. ROGER CORBETT, Chairman: One of the most important things that I can do is to report on the discussion method that Mr. Miller of Michigan followed. The whole group was divided into ten small groups. We had about one hundred persons, and so we had about ten persons in each of these groups. Each of these groups were to decide on the question which they wished the whole group to discuss. They were also to choose a spokesman. Then Mr. Miller brought them back into the group as a whole and for about an hour, these questions were presented and discussed. Mr. Miller then directed us back into the smaller groups with the suggestion that we bring out something on how to get a good job done in this field, and to choose a representative as a member of a panel for the whole group.

These are the ten questions that the ten groups presented to the whole section: 1. How to make rural communities health conscious. Who will take the leadership? How is action to be obtained? 2. What is the need for research and study on health and medical needs? How are the health problems determined? 3. What should we emphasize in a health program? What are some of the common objectives of a health program? 4. What are effective ways of solving health problems? Once that we know the problem, how do we meet it? 5. How do we interest members of the community not members of organizations? What percentage of the population belongs to some organization? 6. How can we effectively reach the underprivileged group of our community? 7. Is compulsory vaccination and immunization of all a good thing? Can one legislate good health in a community? 8. How can we coordinate the interested groups in the community? Who will take the responsibility? Who will assume the leadership? How is the domination of a single group prevented? 9. How can we make health a male as well as a female responsibility? In one state, it was reported that the men felt that health was the responsibility of women alone. 10. How can we develop concern? How can we interest an organization? How can we arouse individual interest in health problems?

Then we had a panel discussion. We have summarized all this discussion under two headings: motivation, and mobilization and organization.

We came to the conclusion that motivation was one of the most important things. It was suggested that the "pocketbook" is always a motive. Good health influences income among farmers.

A specific desire is that of boys and girls to excel in sports. Good health and posture are essential to success in sports.

As a part of this first step, get the various organizations acquainted. Obtain decisions as to what are the main problems. When you have the problems clearly set out develop a systematic plan for publicity based on facts.

One thing that interests all parents is the number of school days that are lost by children because of sickness. Use success stories—what other counties have done that has been successful means something. Enlist the cooperation of the schools. Make use of health problems as illustrations in teaching. Take advantage of opportunities presented by crises, such as floods and epidemics.

The last main heading is mobilization and organization. How can we get organizations and individuals who do not belong to organizations together? Interviews with persons scattered all over the area appear to be the only means. Maintain a strong line of contact between the health council if that is what you are setting up, your health committee, and these community organizations.

The members of the health council or the committee should be made up of actual representatives of the community organizations, not chosen from the top but chosen by the organizations themselves. Participation is a key means of developing organization and maintaining interest.

Getting together is a start; working together is progress; staying together is success.

DISCUSSION

DR. D. G. MILLER, Morgantown, Ky.: The thing that I should like to suggest on the enlisting of the cooperation of schools in health education is the heart of the student's health grade. It depends on: (1) whether he had the examination required by the state department of education; (2) whether or not he attempted to correct the defects found in that examination, and (3) whether or not he had all of the immunizations that were offered either by the county health department or by individual physicians.

MR. D. E. LINDSTROM, Urbana, Ill.: There seems to be a conflict in thinking between group number one and this group in the organization of a county health council. The first group implies that it should be made up of individuals primarily rather than by organization representation. This group indicates that one should maintain strong and persistent contacts with the organizations of which the health council is made up. I should like to take a middle ground in that there is a place both for organizational representation and strong individuals on this health council, and therefore avoid that kind of conflict.

Committee on The General Practitioner in Rural Practice

DR. FRANKLIN MURPHY, Chairman: Our panel did not organize itself in a streamlined fashion as the previous one did.

The panel represented all phases of medical activity including the producer, the purveyor and the consumer of medical service. The bulk of the three hour session was devoted to participation by the members of the audience.

Certain areas of agreement were rather clearly reached.

1. Full agreement was reached that there is a dearth of physicians in rural areas and that a real problem exists.

2. There was apparently universal agreement that this unfortunate situation was the responsibility of the medical profession and the rural citizenry. The resolution of the problem depends on joint interest and action on the part of both the physician and rural citizens. Health is not just the province of the physician, but in fact depends on unanimity of purpose by both the physician and the consumer; i. e., the community.

3. It seemed clear that the general practitioner or family physician is recognized as the crucial person in the provision of an adequate and effective rural health program. The responsibility of schools of medicine to redignify the family physician and to put him in his proper position as the crux of our over-all health problem was discussed with full agreement.

4. Wherever efforts have been made to provide adequate postgraduate training for the general practitioner, increasing numbers of young men have evidenced their interests in this type of practice. If we provide at the undergraduate level as well as at the postgraduate level opportunities for continuing professional improvement, more and more men and women will be directed into the channel of family practice.

5. The general public is somewhat confused about the apparent limitation of the number of persons who can be trained to practice medicine. It has been suggested that this is a self imposition of artificial standards on the part of the profession to keep the numbers of practicing physicians down to the economic betterment of the medical profession. It was pointed out that the standards of medical education which limit the numbers of persons who can study medicine are established for the protection of the people rather than the physicians and that, in fact, today all existing medical schools are operating at full capacity and that any increase in the number of medical graduates will come only by the provision of more adequate training facilities with associated increased operating budgets. There was complete unanimity that whenever and wherever increased production is demanded, it be accomplished with the maintenance of existing standards of medical education.

6. Essential services are in many instances provided by the facilities of a hospital. Outpatient operations of hospitals may not have been explored as widely as possible. Postgraduate or continuing medical education is in many instances most easily accomplished in and around the hospital. The point was made that the professional activities associated with the hospital call for constructive participation by the physician.

7. Wherever possible, cooperative efforts on the part of two or more physicians are desirable. Solo practice puts too heavy professional as well as social limitations on the individual. Practice of medicine in rural areas on a regional basis with helpful expert consultation appears to be increasing throughout the country. Its success depends on strict understanding on the part of the patient, the family physician and the specialist that there is a normal chain of medical service and that in all instances the patient will seek advice from the family physician first and that the latter will continue to maintain contact with his patient throughout the period of consultation if such is needed. The satisfying medical experience that such a relationship provides is immediately broken down if the family physician is by-passed, either by the patient on the one hand, or by the specialist-consultant on the other.

8. In various parts of our country productive and fruitful efforts are being made by the medical schools, the medical profession and the patients as represented by various lay groups. Members of the medical profession must intensify their efforts in the field of lay understanding of the problems of medical education and practice. The laymen present at our meeting seemed to feel that definite progress is being made in the resolution of these problems. The democratic way of mutual citizen-cooperation will continue to solve these problems without the application of all-inclusive and artificial formulas.

DISCUSSION

DR. ROY FOUTS, Omaha, Neb.: Having spent more than ten years in general practice, and all of that time in a small community or small town, and having been close to general practice or rural medicine, I have been in constant touch with the problems of the rural community and of the general practitioner or the country doctor. The problem of rural practice, or the need in rural medicine, is not going to be answered or does not lie in getting more physicians. I have always contended that we have enough doctors providing we had a proper distribution of those doctors; and it has been shown by a rather recent survey by Dr. Dickenson with which you are all familiar, I am sure, that we have more doctors at the present time than we had in years gone by. It was mentioned by the panel chairman that the responsibility was first of the doctor and then the community; later he did touch on the responsibility of our medical institutions and colleges. I think that their responsibility is just as great. Some medical schools are starting on a program requiring at the end of the sophomore year, or junior year, that two or three months be spent with a general practitioner as a preceptorship in a rural community. Many of the men will find out things about rural practice and about the country that they never knew before. They will find things that they will like. They will find opportunities. A great many of them, through formal association with the older man, will want to return. The standard of medical practice among the general or rural physicians is decidedly higher than it is among the general physicians in our cities. I believe that our medical schools have an obligation to teach and train and instil in their students the idea that there are opportunities in general practice or rural practice. Providing this preceptorship following sophomore or junior years will lead more men into rural practice.

The doctor who graduates from the medical school and immediately starts his internship and his residency with the idea of being a certified specialist without any general practice has lost a lot. He never becomes a real rounded-out doctor and does not become even a good specialist in many instances.

CHAIRMAN CROCKETT: Dr. Fouts is Vice-President of the American Medical Association. He speaks with authority.

DR. WALTER E. VEST, Huntington, W. Va.: In West Virginia we are hoping within the next few months to launch a program whereby interns and residents may go out into the rural communities for one or two months as an aid to physicians and still get credit for that service. The Attorney General in the state has recently ruled that the Public Health Council can do that. The Public Health Council with the aid of the Council of State Medical Associations and the hospitals of the state expect to try to put it into effect. We hope that will do something in stimulating men to find out just what is in rural practice in West Virginia and turn more and more in that direction. West Virginia is largely a mining state, and we are putting on this plan to relieve the men in the mine positions.

DR. J. L. CAUGHEY, Cleveland, Ohio: I should like to take up the challenge of one of the preceding speakers who put considerable responsibility in the hands of the deans of the medical schools in respect to the distribution of the graduates of those schools. I believe that idea erroneous. Distribution of physicians is determined largely without reference to anything that the deans may do or say while the students are in school. We cannot even tell them where to go for their internship, and what happens in their internship has a great deal to do with what they will do after they have finished their first year or two of graduate training. It seems to me that our students will not go into rural areas to practice medicine if they believe that the only thing that they have to look forward to is ten years of drudgery before they can go to a bigger city and be specialists. If they are going to go into the rural areas to practice medicine, it is going to be because of their interest in people, because of their desire for the close, continuing relationship of the family physician with his patients. We can try to instil that interest. In the selection of persons for medical school, we may find persons more emotionally fit for that line. But they will not go out into small communities to practice unless they find working conditions which they consider suitable. They will not go unless their wives are satisfied to go with them and find in the community something in the way of educational opportunity and social opportunity which will be satisfying. The medical schools do have a great responsibility in developing in the students the interest in the patient which is a necessary ingredient in rural medicine, but distribution depends on economic and social factors which are far beyond the control of the medical schools. The solo practice of medicine in rural areas is a strong deterrent to our students in seeking such a career. They know that within two or three years they will be working sixteen hours a day seven days a week, and none of our graduates seem to want to do that any more. Maybe they used to, twenty-five years ago, but they don't now. Some kind of associated practice, is absolutely necessary if our modern graduates are to be persuaded to go into rural practice.

DR. W. L. PRESSLY, Due West, S. C.: This subject has been close to my heart over a period of thirty-two or thirty-three years as a family doctor in a small area, and I feel hopeful of the situation. The problem can be solved by the medical profession and its allied associates. A doctor should not attempt to practice alone. He separates himself from his family to which he has a responsibility and from the responsibility of his church and his school. If Dr. "A" likes pediatrics, for example,

allow him to look after the children. I have through the years had associates some of whom after a few years thought they would like to get into a specialty, and many of them have. The medical profession must never lose sight of the fact that we have a direct responsibility to the people, and we must rededicate, if a rededication is necessary. I think we must never lose sight of this direct responsibility for the health and happiness of our people.

DR. W. E. BARSTOW, St. Louis, Mich.: There is one point that I think would be of interest and perhaps be of benefit to our lay members of this group, and that is the question of night calls. We hear throughout the country the complaint that our younger men will not get up and make night calls. In my early days of practice, the question of night calls was a bugbear. We were called out night and day and we had that to contend with all the time. In our locality, we have educated the population to the effect that a doctor does need some time to sleep and some time with his family. Most of the people, if they stop to think about that, will confine themselves to necessary night calls and emergencies. Now we do not have so much trouble. It is more a matter of thoughtlessness than it is of selfishness with the people—they think they can call a doctor when they like and they used to do it. That used to be the sentiment, but it is changing now, since they realize that their men are overworked. I think with a little work from our lay members among their localities that practice will be largely eliminated and, when it is, the younger men are going to be more willing to go into the country.

CHAIRMAN CROCKETT: Often when night calls are made the physician finds that it is someone that he never heard of before. It leads to the suggestion that if our lay people would urge on their groups that every family, while well, should select some doctor and advise him that they wish to be included in his group of families, so that he may look them over and know what their health assets and liabilities are when he is not hurried; then when they call him in the middle of the night he knows that he is dealing with one of his families for whom he has accepted responsibility. It would help to simplify the matter a great deal.

REV. V. A. EDWARDS, Nashville, Tenn.: I represent the rural ministry. They tell me that misery likes company, and when I hear the doctors and the discussions with reference to a reluctance on the part of the doctors and the responsibilities of the medical schools and that sort of thing, it seems to me that I am in a similar discussion where the rural ministers are also reluctant to serve in the country. A study is now being made of the number of resident ministers in the National Baptist Convention. To date that number is 10 per cent of the churches in the denominations being served by resident ministers. We are making the same plea for ministers to serve in rural areas. The attitude of wives about going to these areas is equally important in the ministry.

DR. MURPHY: We doctors are ridiculed because we talk about the human aspect of medical practice, the doctor-patient relationship. It ought to be perfectly clear that when we talk about the doctor in the community and his concern with his patient and the fact that there must be community cooperation and there must be understanding on the part of communities about night calls and schools, that we are talking about an intimate relationship, health, of wife, children and husband. If we are to get doctors into rural areas, we will provide a milieu, an environment, which will draw that doctor. We will provide an orientation which will direct him. We will work with the communities and they with us to provide him with the tools to do the job, and then you will get doctors in rural communities just as you get teachers and all the rest. If you try to legislate this problem, you will do nothing but produce continuing difficulty which in turn will have to be legislated, and in the end you will have a legislative strait jacket which, in the last analysis, will harm the consumer much more than it will the physician. Consumers are the ones whose health and lives are in jeopardy. I, as the dean of a medical school, refuse to press young men to go into areas where they will be pawns in the hands of older men. It must be a helpful, cooperative attitude on the part of the older man, and I want to make it clear right here that in ninety-nine instances out of a hundred it probably is; but let us among ourselves be honest and discipline ourselves about that 1 or 2 or 3 per cent and make it clear on the county, state or national level that we will not permit that. I agree with the assistant dean of Western Reserve University that we certainly have our responsibilities for orientation and direction. We will maintain an effort to increase our effect. I will freely admit that we have fallen down in the past perhaps, but I say that we cannot do it alone and that the medical profession on the one hand must encourage, must make it possible for these young men when they come out in the rural areas to function effectively and that lay persons, in addition to that, must recognize that doctors are human beings, that they cannot be moved around even by them like pawns on a chessboard. There is no excess of physicians in Kansas City, Kan. There is no excess of physicians in Wichita. There is no excess of physicians in Topeka—the largest cities. From where I sit, there is a shortage of physicians. In Kansas, we propose to increase our graduating class but without any compromise with medical training standards. If you feel, on the basis of your advice, consultation, wherever it be, in whatever part of the country, that an increased production is needed, then you have a deep obligation to support the medical educator's attempt not to permit standards to be lowered and to fight effectively for increased facilities and the necessary operating budget to run those facilities effectively.

Committee on Nutrition and the Soil

DR. W. L. ALBRECHT, Chairman: That good nutrition goes back to more fertile soil is still a new concept to many. It has not yet engendered fixed opinions and points of view inviting sharp divisions into groups or camps sponsoring one or more kinds of specific group action. The concept is just starting to grow, to be considered, and to be studied. The session of this section was therefore one of educational effort and study more than of resolutions and recommendations for specific action of any group of society.

Good health depends on the state of nutrition more than on anything else. In turn, nutrition depends on the quality of food. Food can, of course, be spoiled in the harvesting, storing, processing, selecting, cooking and serving, but good food can come only from soil supplying all the essential elements and compounds necessary for providing energy and for growth and repair of our bodies.

Plants synthesize the many complex organic and inorganic compounds by which we live. Carbohydrates, for energy service are synthesized on almost any soil. Carbohydrates, proteins, vitamins and all other food essentials are synthesized more completely on the fertile soils delivering essential elements. Provision of proteins is the major food problem, because bulk has become the criterion for agricultural output. A new criterion is needed. Food values as proteins and associated qualities for body building and reproduction rather than bulk delivery are better criteria, but call for more fertile soils.

There is the suggestion that national patterns of human ailments made from records of inductees into the Army might show a relation to the pattern of soil fertility. Declining soil fertility (soil exhaustion) is bringing carbohydrates into prominence, while proteins and other essentials in our food are less common. Conservation of the soil and its fertility are basic to health conservation.

Education concerning the soil as well as our health is needed. Farming is a complexity of many sciences, and education is a requisite for successful farming. Education is needed to help the farmer improve his own health via better nutrition in terms of more fertile soils and better farming of them. We have too long been ignorant of what fertile soils can do.

The farmer, in many instances, is compelled by economics to mine his farm and throw not only the fertility of his soil, but the health of himself and his family, into the bargain for the privilege of being a farmer. He makes no charge for the soil fertility in the goods he sells. According to the concepts controlling income taxes, and those of other taxation procedures, soils cannot be depreciated. Exhausted soils prohibit rural living from offering much attention to health. Under such distorted economics other essentials must be considered first and health last. Poor soils do not invite medical service, just as they do not invite other advantages. Rebuilding the agricultural creative power by rebuilding the soil will rebuild rural health just as better soils brought to the country rural electrification, better sanitation and other advantages through the farmers' own efforts before the days of national rural electrification.

That the subject "Nutrition and the Soil" should find sponsorship by the American Medical Association in a national conference deserves special recognition and commendation, to say nothing of encouragement for future repetition. It represents an approach of positive nature to the health problem and one on a broader base with preventive as well as curative efforts in prospect. Let us hope that through this broader scope more help will be enlisted for better health to more people through education and their own efforts to keep it and to get it through better nutrition by way of better stewardship of our soils.

DISCUSSION

DR. W. L. BURNAP, Fergus Falls, Minn.: I feel that we should not pass by this matter of Dr. Albrecht's without a word because it is of tremendous importance. We know the importance of fertilization. I have been interested in farming a little myself, and I know that it pays to fertilize, but I never got a conception of the fact that one may get a good crop without having the mineral elements there. Dr. Albrecht's reprint should be studied.

DR. ALBRECHT: Just a brief remark about the reprint. You might write to the College of Agriculture at the University of Missouri, Columbia, Missouri, for the circular entitled "Our Teeth and Our Soils." It is the reproduction of what I brought yesterday except for the deletion of one or two paragraphs necessary to set it up as a circular.

LUNCHEON MEETING, RURAL HEALTH, FEBRUARY 5

Dr. Crockett, Chairman of the Rural Health Committee of the American Medical Association, introduced the members of the Rural Health Committee to the audience, and then introduced the speakers, after which he expressed thanks to the staff members who had worked on the entire meeting. Dr. Crockett stated that Dr. Sensenich, who was to have appeared on the program, had been called to Washington, D. C., and hence was unable to attend the meeting. He then introduced Dr. Elmer Henderson, Chairman of the Board of Trustees.

Address of Dr. Elmer L. Henderson

DR. ELMER HENDERSON, Louisville, Ky.: We are indeed grateful to the Committee on Rural Health for the wonderful work that they have been doing the past few years. We are also grateful for the rural groups that have participated in these meetings. I have attended these meetings the past four years. Every one of them seems a little better than the one before.

I was much impressed by the eleven point resolutions that were passed here yesterday afternoon. They insure, if put into effect, that the rural communities will really have an adequate medical service. I wish to assure you that the officers and members of the Board of Trustees of the American Medical Association support that program 100 per cent.

We are especially anxious to solve the rural problem, and if given time we are going to solve it. We realize your problems. I was raised on a hill farm in Kentucky, and I know a great deal about rural life. We are just as anxious to solve your problems as you are yourself. We know that we can solve them better than any governmental agency regardless of what it is.

It has been my lot for the past few years to travel in a great many countries. I have traveled in practically all the European countries except those back of the iron curtain. I know what any form of governmental medicine is. Whenever politics steps into medicine, medicine begins to deteriorate, and it deteriorates rapidly. That is what we do not want to happen to you—the rural areas or any other areas of the United States.

It was only a short time ago that a man who graduated in medicine did not feel his education complete until he had gone to Europe and spent two or three years. Within the past two years, I have been in Europe four different times. Medical education in Europe is practically nil today, and that is just what will happen to the American people if medical education and medical service are administered under any political organization. That is the reason why we are endeavoring to do everything we can to bring about the proper medical service to all the American people.

It is unfortunate that a great portion of the public cannot understand the doctors' point of view. The majority of the lay people feel that doctors are interested purely from a mercenary standpoint. That is not true. The American Medical Association has been fighting for the great American public. That is what we intend to continue doing.

Address of Dr. W. L. Pressly, M.D., General Practioner of the Year

DR. W. L. PRESSLY, Due West, S. C.: May I be permitted, as I begin this talk, to express to the American Medical Association my appreciation of the honor bestowed upon me. I accept it in the spirit of humility, recognizing that it is an honor that has come, not to me personally, but to me as a representative of 130,000 general practitioners. To be the representative, even for a short time, of this company of splendid men gives one a feeling of great responsibility. I assure you, it shall be my constant endeavor to use, to the best of my ability, privileges which this honor brings me in furthering the great work of the American Medical Association.

And now I want to express my pleasure in being permitted to be present at this conference. Twice before I have had this privilege and I wish most heartily to congratulate Dr. Crockett on his eminent success in this undertaking. His efforts have made a noteworthy contribution to the solution of the problems of rural health.

During the last decade rural medical care has become the real problem of our profession. It was in recognition of the seriousness of this problem that the officers of the American Medical Association organized the Conference on Rural Health. Personally, I believe that the health and happiness of the rural people is a definite responsibility of the medical profession. We must accept the challenge or suffer the consequences.

When the structure of rural life—I am thinking especially of the farming people—is jeopardized, the American way of life is seriously threatened. When a young man is making his choice of a place in which to live and work and rear a family, he will certainly want to know what he may reasonably expect in the way of medical care for himself and his family. The American doctor owes this young man the positive assurance that, whether he chooses the large metropolitan center or the small town or the remote rural district, full medical care will be provided.

The efficiency of our fighting men in the late war, so often remarked upon, can be definitely traced to the fact that they received the very best that medical care could provide. In like manner, our rural areas demand the best in hospital and medical care if they are to continue to supply the food and clothing upon which the health and prosperity of our nation depend.

Primarily, this planning and care should be done by the doctors. However, I would not be understood as underestimating the valuable aid by various organizations interested in rural community life and health such as the Grange, Farm Bureau Federations, and similar organizations. During former meetings of this conference, I have been greatly impressed by the constructive thinking and plannnig of representatives of such groups. By united effort, not only the problem of health but also those of a social, educational and religious nature will receive the attention and emphasis they rightly deserve.

Having been engaged in rural practice for the past thirty-two years, I have witnessed a most gratifying change in rural medical care as regards contagious and infectious diseases. Typhoid, diphtheria, smallpox and malaria have all but been eradicated. Good roads and modern transportation have brought medical care within easy reach of most people. I feel that the Hill-Burton Bill has done much to encourage young men to locate in the smaller towns and rural areas. However, we should not slacken our efforts, for "there remaineth yet very much land to be possessed."

Just here I cannot refrain from saying a few words on my pet theme. No doctor should plan to enter on medical practice alone. It has been my observation that when doctors organize to do group practice they carry forward their work with greatest satisfaction to themselves and greatest benefit to their patients. By this statement, I am not referring to a group of specialists associating themselves together, but to general practitioners seeking to give to their communities the best medical care of which they are capable. Back in 1941, when chairman of the section on general practice of the Southern Medical Association, I reported that 85 per cent of the patients could be intelligently and skilfully treated by a group working together—the other 15 per cent to be referred for special study to specialists in the fields of surgery, eye, ear, nose, throat, etc. Recent investigations and surveys have revealed that the percentage is even higher than 85 per cent. Much more might be said but time does not permit.

The medical profession must ever keep uppermost the thought that ours is a life of service. It is a service that constantly demands self denial, self sacrifice and hard work. But from this path there can be no turning aside, if we would hold fast the ideal, "Not to be ministered unto, but to minister." In this path the great men of our profession have walked. Today they summon us to face, with courage and devotion, the tasks and problems and opportunities which constitute our high calling.

DOCTOR CROCKETT: We have asked Mr. J. O. Christianson, Superintendent of the School of Agriculture of the University of Minnesota and Director of the Agricultural course at that University, to speak.

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Address of Mr. J. O. Christianson, Superintendent of the School of Agriculture

MR. J. O. CHRISTIANSON, Minneapolis: Dr. Crockett, I am glad to come from Minnesota to speak of the work being done by the School of Agriculture and Public Health, Blue Cross, Farm Bureau and Blue Shield in the voluntary field. This is not an experiment in a voluntary program. Seventy-five thousand farm people joined together on a voluntary program. It seems to be accepted as a general program.

Sometimes we find that when a group has long been condemned, they rise up and speak for themselves. I want to pay tribute to this great association that gives service to Americans; also service in this rural health conference. Gradually we are educating the public to understand.

I will make a few comments on the reports. Building of hospitals: Local people should build their own facilities. Teachers do not build the public schools. They are built by the community. Build hospitals on that basis and do not quibble as to the cost. There is too much quibbling about definitions while more and more objectives are being forgotten.

Sweden has eight thousand athletic clubs. No wonder Sweden took first place in sports. They have a living program. We are beginning to turn responsibilities over to institutions. It is the duty of the school to train our young people and give them character. Little by little we are abdicating our own responsibility, showing the American kind of democracy that I observed in the countries in Europe. People look more and more to the general practitioner. There is a tendency to turn our problems over to one group and to blame them if things do not turn out satisfactorily. I have indicated the fine state of affairs in the State of Minnesota, where rural health has been given attention through the medical school, the state public health department and farm organizations. We feel in Minnesota that we are making significant progress. Families make connection with doctors before the time of immediate need. It is a program of education. Our extension program in Minnesota is emphasizing this as they will all over the nation. Get people to make contact before it becomes an emergency. That is a problem of education. It takes some time to develop this program. The general philosophy of prepayment health insurance is sound. I do not believe in the paternal philosophy. I think this country grows strong through people's having faith in themselves, in God and in their country. My father and mother came from a foreign land and appreciated the opportunities they had. We lived because of that faith in that country. We grew out of that great home. He felt it was the most important thing of this nature. People are civilized only so far as they can plan ahead. We make provision for the future. The savages lived from day to day. A good test of the social standard of a nation is the interest shown in handling our problems ourselves.

The point of downward turn in past civilizations was when people started to lose faith in themselves and looked for central powers to take care of their problems for them. Modern civilization would be destroyed if the things we take for granted, the rights of individuals, were destroyed. The threat of civilization of the world today is the changing of life values entailed by government doctrines in the medical practice and hospitals. It is the faith in people, it is the mental courage we need to come to again. We must remember it is not so much what belongs to us that determines our destiny, as what we belong to. We must remember that this government cannot be centered in any one person or one place alone. It rests as it should in each person and community. Nothing can take the place of people's belief in themselves and their own organization

CHAIRMAN CROCKETT: I want to take this opportunity in the last two moments of this conference to thank you who have come and contributed of your experience and wisdom to the panel sessions, to those who entered into the program yesterday morning; the Committee on Rural Health of the American Medical Association and the farm resources people who have come to us from the agricultural departments of our agricultural colleges have helped us to make this not a doctor convention, not a lay convention, but a well rounded conference in which we try to have all the elements affecting the problem of rural health represented and represented freely.

Each year these conferences seem to be getting a better response, and as long as that continues, as long as you people show by your attendance and your participation that you think it is worth while, I assure you that we will continue with the program.

Coming Medical Meetings

Alabama, Medical Association of the State of, Montgomery, April 19-21. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for the Study of Neoplastic Diseases, Washington, D. C., Kellogg Building, April 7-9. Dr. Eugene R. Whitmore, 2139 Wyoming Ave., N.W., Washington, D. C., Secretary.

American Association of Anatomists, Philadelphia, April 13-15. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Association of Genito-Urinary Surgeons, White Sulphur Springs, W. Va., Greenbrier Hotel, May 9-11. Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secretary.

American Association of Industrial Physicians and Surgeons, Detroit, Book-Cadillac and Statler Hotels, April 5-9. Dr. Edward C. Holmblad, 28 E. Jackson Blvd., Chicago 4, Managing Director.

American Association of Pathologists and Bacteriologists, Boston, April 15-16. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Association of the History of Medicine, Lexington, Ky., May 23-24. Dr. Benjamin Spector, 416 Huntington Ave., Boston 15, Secretary.

American Association on Mental Deficiency, New Orleans, Hotel Roosevelt, April 27-30. Dr. Neil A. Dayton, Box 51, Mansfield Depot, Conn., Secretary.

American Broncho-Esophagological Association, Chicago, Drake Hotel, April 18-19. Dr. Edwin N. Broyles, 1100 N. Charles St., Baltimore 1, Secretary.

American College of Allergists, Chicago, April 14-17. Dr. Fred W. Wittich, 423 LaSalle Medical Bldg., Minneapolis 2, Secretary.

American Dermatological Association, Hot Springs, Va., May 23-26. Dr. Louis A. Brunsting, 102 Second Ave. S.W., Rochester, Minn. Secretary.

American Goiter Association, Madison, Wis., Hotel Loraine, May 26-28. Dr. Thomas C. Davison, 478 Peachtree St., N.E., Atlanta 3, Ga., Secretary.

American Industrial Hygiene Association, Detroit, Book-Cadillac and Statler Hotels, April 5-7. Dr. Henry F. Smyth Jr., 4400 Fifth Ave., Pittsburgh 13, Executive Secretary.

American Laryngological Association, New York, May 16-17. Dr. Louis H. Clerf, 1530 Locust St., Philadelphia, Secretary

American Laryngological, Rhinological and Otological Society, Chicago, Drake Hotel, April 18-20. Dr. C. Stewart Nash, 277 Alexander St., Rochester 7, New York, Secretary.

American Orthopedic Association, Colorado Springs, May 18-21. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Orthopsychiatric Association, Chicago, Stevens Hotel, April 4-6. Nina Ridenour, Ph.D., 25 W. 54th St., New York 19, Secretary.

American Otological Society, New York, May 18-19. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse, N. Y., Secretary.

American Pediatric Society, Atlantic City, May 5-6. Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secretary.

American Physiological Society, Detroit, April 19-22. Dr. Milton O. Lee, 2101 Constitution Ave., Washington 25, D. C., Executive Secretary.

American Psychiatric Association, Montreal, Canada, May 23-27. Dr. Leo H. Bartemeier, General Motors Bldg., Detroit 2, Secretary.

American Society for Clinical Investigation, Atlantic City, May 2. Dr. Paul B. Beeson, Grady Hospital, Atlanta 3, Georgia, Secretary.

American Society for Experimental Pathology, Detroit, April 18-22. Dr. Frieda S. Robscheit-Robbins, 260 Crittenden Blvd., Rochester, N. Y., Secretary.

American Society for Pharmacology and Experimental Therapeutics, Detroit, April 18-22. Dr. Harvey B. Haag, Medical College of Virginia, Richmond 19, Secretary.

American Society for Research in Psychomatic Problems, Atlantic City, Chalfonte-Haddon Hall, April 30-May 1. Dr. Sydney G. Margolis, 714 Madison Ave., New York 24, Executive Secretary.

American Society of Biological Chemists, Detroit, April 17-22. Dr. Otto A. Bessey, 1853 W. Polk St., Chicago 12, Secretary.

American Surgical Association, St. Louis, April 20-22. Dr. Nathan Womack, University of Iowa, Iowa City, Secretary.

American Urological Association, Los Angeles, Hotel Biltmore, May 16-19. Dr. Thomas D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Arizona State Medical Association, Tucson, May 8-10. Dr. Frank J. Milloy, 124 E. Monroe St., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-16. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 3-4. Dr. Henry M. Thomas Jr., 1201 N. Calvert St., Baltimore 2, Secretary.

California Medical Association, Los Angeles, May 8-11. Dr. L. Henry Garland, 450 Sutter St., San Francisco 8, Secretary.

Connecticut State Medical Society, New Britain, State Teachers' College, May 3-5. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Federation of American Societies for Experimental Biology, Detroit, April 18-22. Dr. Milton O. Lee, 2101 Constitution Ave., Washington 25, D. C., Secretary.

Florida Medical Association, Belleair, April 10-13. Dr. Robert B. McIver, 111 West Adams St., Jacksonville, Secretary.

Georgia, Medical Association of, Savannah, Hotel De Soto, May 10-13. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, May 5-8. Dr. Harry L. Arnold Jr., 510 S. Beretania St., Honolulu, Secretary.

Illinois State Medical Society, Chicago, Palmer House, May 16-18. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 18-21. Dr. Allan B. Phillips, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Topeka, May 9-12. Dr. D. D. Vermillion, 512 New Jayhawk Bldg., Topeka, Secretary.

Louisiana State Medical Society, New Orleans, May 5-7. Dr. P. T. Talbot, 1430 Tulane Avenue, New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of the State of, Baltimore, April 26-27. Dr. George H. Yeager, 1211 Cathedral St., Baltimore 1, Secretary.

Massachusetts Medical Society, Worcester, May 24-27. Dr. H. Quimby Gallupe, 8 Fenway, Boston 15, Secretary.

Medical Library Association, Galveston, Texas, April 10-14. Miss Mildred R. Crowe, Medical College of Alabama Library, Birmingham 5, Ala., Secretary.

Minnesota State Medical Association, St. Paul, Municipal Auditorium, May 9-11. Dr. B. B. Souster, 496 Lowry Medical Arts Bldg., St. Paul 2, Secretary.

Mississippi State Medical Association, Biloxi, May 10-12. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Tuberculosis Association, Detroit, May 2-6. Dr. H. Stuart Willis, 1790 Broadway, New York 19, Secretary.
Nebraska State Medical Association, Omaha, Hotel Paxton, May 2-5. Dr. R. B. Adams, 416 Federal Securities Building, Lincoln 8, Nebraska, Secretary.
New Jersey, Medical Society of, Atlantic City, Hotel Ambassador, April 25-28. Dr. Earl L. Wood, 315 W. State St., Trenton 8, Secretary.
New Mexico Medical Society, Roswell, May 5-7. Dr. H. L. January, 221 W. Central Ave., Albuquerque, Secretary.
New York, Medical Society of the State of, Buffalo, Hotel Statler, May 2-6. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary.
North Carolina, Medical Society of the State of, Pinehurst, The Carolina, May 9-11. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.
North Dakota State Medical Association, Minot, May 14-17. Dr. O. A. Sedlak, 702 First Ave. S., Fargo, Secretary.
Ohio State Medical Association, Columbus, April 19-21. Mr. Charles S. Nelson, 79 E. State St., Columbus 15, Executive Secretary.
Oklahoma State Medical Association, Tulsa, Mayo Hotel, May 15-19. Mr. R. H. Graham, 410 Plaza Court Bldg., Oklahoma City, Secretary.
Rhode Island Medical Society, Providence, May 11-12. Dr. Morgan Cutts, 106 Francis St., Providence 3, Secretary.
Society of American Bacteriologists, Cincinnati, May 15-20. Dr. John Blair, Hospital For Joint Diseases, New York, Secretary.
South Dakota State Medical Association, Yankton, May 22-24. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.
Southeastern Surgical Congress, Biloxi, Miss., May 23-26. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Ga., Secretary.
Southern Branch, American Public Health Association, Dallas, Texas, Baker Hotel, April 14-16. Dr. George A. Denison, 600 S. Twentieth St., Birmingham, Ala., Secretary.
Southwest Allergy Forum, El Paso, Texas, Hotel Paso del Norte, April 4-5. Dr. O. E. Egbert, First National Bank Bldg., El Paso, Secretary.
Tennessee State Medical Association, Chattanooga, April 12-14. Dr. W. M. Hardy, 706 Church Street, Nashville 3, Secretary.
Texas, State Medical Association of, San Antonio, May 2-5. Dr. Harold Williams, 700 Guadalupe St., Austin, Secretary.
Western Association of Industrial Physicians and Surgeons, Los Angeles, Hotel Biltmore, May 7. Dr. Christopher Leggo, Crockett, Calif., Secretary.

Medical Legislation

STATE LEGISLATION

Delaware

Bill Introduced.—S. 263 proposes the creation of a **State Board of Sterilization.** Three members of the board must be physicians.

Illinois

Bills Introduced.—H. J. R. 19 proposes that the board of trustees of the University of Illinois be urged to take into particular consideration **the rural areas** in which sufficient doctors are not now practicing to maintain the high standard of health to which all of the residents of the state are entitled in considering applications for admission to the College of Medicine of the University of Illinois to the end that a definite preference be shown to the residents of needy areas who express at the time of their application an intention to return to their home communities upon completion of their medical course. H. 246 proposes the creation of a commission to make a thorough study of the laws relative to the care, treatment and training of **feebleminded, mentally ill and epileptic persons** for the purpose of ascertaining needed changes therein.

Indiana

Bill Enacted.—S. 103 has become Chapter 205 of the Laws of 1949. It requires every physician or oculist to report to the state board of health every person diagnosed by him as being **blind or having visual impairment** of a degree sufficient to normally interfere with such person's ability to earn a livelihood.

Iowa

Bills Introduced.—H. 301 proposes the repeal of **the basic science law** and the enactment of provisions which would require the independent examining boards to examine applicants in the basic science subjects in lieu of the previously existing basic science board. H. 530 proposes to amend the **law relating to coroners** so as to require coroners to be licensed practioners of some one of the healing arts. S. J. R. 6 proposes the creation of a special committee to make a comprehensive study of the statutes of the state dealing with **the matter of public health** and the functions of the State Department of Health for the purpose of ascertaining any necessary changes affecting the public health and any advisable changes in the functions, duties and practices of the State Department of Health for the greater protection of the public health in the state.

Kansas

Bill Introduced.—H. 255 proposes certain amendments to the law regulating the practice of **osteopathy.** Among other things the term "osteopathy" throughout the act is changed to read "osteopathic medicine and surgery," the osteopathic board is required to examine applicants in bacteriology, pharmacology and materia medica, and surgery with instruments, in addition to other subjects, and licentiates of the osteopathic examining board would be granted the right to use or apply any therapy or modality calculated to assist or aid a body injured or afflicted with physical or mental infirmities in effecting its own cure or the use or application of such agencies in restoring the normal condition of the body, including, but not by way of limitation, surgery with instruments and medicinal substances when indicated.

Maryland

Bills Introduced.—H. 460 proposes the creation of a state **board of naturopathic examiners** and defines naturopathy. S. 329, to amend the law relating to the practice of medicine, proposes that applicants for a license who **graduated from a college in a foreign country,** the entrance requirements, standard of education and requirements for graduation of which are equivalent to the standard defined by the Association of American Medical Colleges or the Inter-collegiate Committee of the American Institute of Homeopathy may be admitted to the examination. S. 331 proposes that **one student from each county** and legislative district of Baltimore City who shall comply with the entrance requirements shall be educated free of charge for tuition and laboratory fees by the Medical School of the University of Maryland and shall be paid the sum of $500 per year toward living expenses. Before accepting such scholarship, however, applicants must sign a pledge in writing that they will practice medicine for two years in the county or city from which they are appointed.

Minnesota

Bills Introduced.—H. 1090 proposes to make it unlawful for any female human being to submit to the act or operation of **artificial insemination** or for any person to perform the act or operation of artificial insemination upon any female human being or to assist, aid or abet any person in the performance of such act or operation, or to donate, contribute or collect semen therefor. A child born by means of artificial insemination where the husband has expressly or impliedly consented thereto, however, shall be deemed legitimate. H. 1092 proposes to authorize a married woman to submit to the act or operation of **artificial insemination** when the husband of such woman has consented, when the woman certifies in writing that she is voluntarily submitting thereto, when the physician performing the act has made a thorough and complete physical and mental examination and found (a) that conception by sexual intercourse is improbable; (b) that the woman is not afflicted with syphilis or with any disease that might be communicated to a child; (c) that both husband and wife have sufficient mental and emotional stability to indicate that the welfare of each and the child would not be adversely affected; (d) that the donor is not afflicted with syphilis or any disease that might be communicated to the child; (e) that the blood of the donor and donee is compatible, and (f) that the donor (when not the husband) resembles the husband in physique, appearance and temperament and is of the same race. H. 1300 proposes to permit the state department of health to suspend or **revoke a hospital's license** for refusal by the hospital to admit any person in medical extremity and in need of emergency care solely for the reason that the licensed physician in attendance is not a regular member of the hospital staff, if facilities are then available. S. 834 proposes to authorize the state live stock sanitary board to license institutions desiring to obtain **impounded animals** for purposes of scientific investigation.

New Hampshire

Bill Introduced.—H. 480 proposes the creation of a commission for the study, treatment and care of inebriates which shall be known as the **commission on alcoholics.** This commission would study alcoholism and its problems, including methods and facilities available for care, custody, detention, treatment, employment and rehabilitation of persons who are inebriates.

Tennessee

Bills Introduced.—H. 865 proposes certain amendments to the **workmen's compensation act** among which is the provision that an employer shall designate a group of three or more reputable physicians or surgeons from which an injured employee shall have the privilege of selecting the operating surgeon or attending physician. S. 475 proposes the creation of a state **board for licensing clinical laboratory technologists** and defines a clinical laboratory technologist as a person who engages in the work and direction of a clinical laboratory. A clinical laboratory technician is defined to mean a person other than a physician and surgeon who, under the direction of a clinical laboratory technologist or a physician and surgeon performs the technical procedure called for in a clinical laboratory.

Texas

Bills Introduced.—H. 416 proposes to declare it to be a monopoly, and contrary to public policy, for any two or more persons, physicians or hospitals to prevent any other licensed physician from visiting patients in such hospitals or performing operations or giving medical attention therein, from refusing admittance to any hospital of any person licensed to practice medicine in the state, from refusing to permit patients in the hospital the right to the services of a doctor of their own choice, and from entering into any agreement to remit, **split fees** or revenues or make what is known in the trade as **cut-backs.** H. 498 proposes the enactment of a **hospital licensing law.** H. 517 proposes to prohibit the acceptance of **any type of rebates** by persons engaged in any licensed occupation or profession within the state.

West Virginia

Bill Enacted.—H. 134 was approved Feb. 26, 1949. It makes general amendments to the medical practice act, including the creation of a **medical licensing board** and the right to make use of the injunctive process to enforce the provisions of the act.

Wisconsin

Bills Introduced.—A. 334 proposes that no person shall perform any medical, surgical or chemical investigation, experiment or demonstration **on any living dog or cat.** A. 407 proposes that a child born to a married woman by means of **artificial insemination** with the consent of her husband shall be deemed the legitimate, natural child of both the husband and his wife for all purposes. S. 358 proposes the enactment of a **hospital licensing law.**

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GOVERNMENT SERVICES

ARMY

NEW POLICY CONCERNING RESERVE COMMISSIONS

With the approval of the Advisory Council of Medical Consultants of World War II, the Surgeon General announced March 7 the policy of the Medical Department in regard to grade on recall and assignment of reserve officers. It was stated that in recognition of obligations assumed by these officers in accepting reserve and National Guard commissions they should receive priorities over officers newly appointed from civilian life when both have equal professional qualifications. It will be the policy in giving final approval of the grades to which civilian personnel are to be commissioned in the Medical Department because of a national emergency to take consideration of the fact that many of these civilians have not had military experience and have not taken part in the reserve and National Guard programs. The Advisory Council, which is a special committee of the Society of Medical Consultants of World War II, unanimously endorsed these policies.

NEW REGULAR MEDICAL OFFICERS

The following physicians have recently been commissioned in the Regular Army Medical Corps:

Rank	Name	Address
First Lieut.	Archibald M. Ahern	Webster Grove, Mo.
First Lieut.	John C. Baber Jr.	Little Rock, Ark.
First Lieut.	Dexter T. Ball	Santa Ana, Calif.
First Lieut.	Hugh M. Cardullo	Brooklyn
Major	Jeremiah A. Dailey	Madison, N. J.
First Lieut.	John A. Duggan	New York
Capt.	Robert O. Emmett	Lake Charles, La.
Major	Gordon F. Fisher	Corpus Christi, Texas
First Lieut.	William A. Graber	Chicago
First Lieut.	William Hausman	Worcester, Mass.
Capt.	Delbert W. Hess	Tucson, Ariz.
Major	Charles W. Hoffman Jr.	Baltimore
First Lieut.	Rudolph M. Jarvi	Detroit
First Lieut.	Richard G. Johnson	Louisville, Ky.
First Lieut.	Arthur E. H. Knox	New York
First Lieut.	Franklin M. Lockwood	Kansas City, Mo.
First Lieut.	David N. Marine	Rehoboth Beach, Del.
First Lieut.	Elwin W. Midgley	Union, N. Y.
First Lieut.	Arthur J. Moseley	Augusta, Ga.
First Lieut.	Joseph G. Murphy	Taunton, Mass.
First Lieut.	Merrill F. Nelson	Alexandria, Va.
First Lieut.	Robert E. L. Nesbitt Jr.	Baltimore
First Lieut.	Lester L. Nienhuis	Ann Arbor, Mich.
Capt.	Max W. Pegram	Tupelo, Miss.
First Lieut.	George W. Pogson	Pittsburg, Kan.
First Lieut.	Irvin L. Schweitzer	Naperville, Ill.
First Lieut.	George W. Shannon	Washington, D. C.
First Lieut.	Leon Stutzman	Baltimore
First Lieut.	Gilbert A. Varnell	Cleveland, Tenn.
Capt.	John W. White	Washington, D. C.
First Lieut.	Forrest J. Woolman Jr.	Peoria, Ill.

MEDICAL CONFERENCE IN TOKYO

At a medical conference at the 361st Station Hospital in Tokyo, Japan, February 23, among the speakers were the following consultants from the United States: Drs. Verne R. Mason (internal medicine), Los Angeles; Byron Smith (ophthalmology), New York, and A. A. Liebow (pathology), New Haven, Conn. Lieut. Col. C. F. Tessemer, M.C., spoke on "Studies Concerning Atomic Bomb Casualties"; Capt. W. R. Gabbert on "Psychosomatic Problems from the Internists Viewpoint"; Capt. M. Reisch on "Basic Principles and Treatment in Dermatology"; Lieut. A. L. Cohen on "Diagnosis of Common Skin Disorders"; Captains R. S. Johnson and J. A. Pennington on "Tuberculosis Among Japanese War Criminals"; E. A. White, Ph.D., on "Problems in Toxicology," and D. B. McMullen, Sc.D., on "Animal and Bird Schistosomiasis." A buffet supper and dance was held at the Officers' Club after the meeting.

OFFICERS ACCEPTED FOR ADVANCED TRAINING

The following Medical Department officers have been accepted for advanced training by the civilian schools and hospitals indicated:

Name	Institution	Subject
Col. Henry S. Murphey	University of Colorado Medical School, Denver	Poliomyelitis
Lieut. Col. Augustus A. Hall	University of Colorado Medical School, Denver	Poliomyelitis
Lieut. Col. James E. Tate	University of Colorado Medical School, Denver	Poliomyelitis
Lieut. Col. Albert W. Shiflet	St. Louis University School of Medicine, St. Louis	Orthopedic surgery
Lieut. Col. George H. McShatko	Shriners Hospital for Crippled Children, San Francisco	Children's orthopedics
Lieut. Col. Martin A. Compton	Medical College of Virginia, School of Medicine, Richmond	Internal medicine
Major William S. Dandridge	University of Colorado Medical School, Denver	Poliomyelitis
Capt. Harry M. Henderson Jr.	University of Colorado Medical School, Denver	Poliomyelitis
First Lieut. Morton C. Creditor	Goldwater Memorial Hospital, Welfare Island, New York	Internal medicine
First Lieut. John W. Frye	Columbia Hospital, Milwaukee	Surgery
First Lieut. Samuel W. Hunter	University Hospitals, University of Minnesota, Minneapolis	Surgery

MEETING OF NEUROPSYCHIATRIC CONSULTANTS

The Neuropsychiatric Consultants of World War II held their fourth annual meeting February 23-24 in the Office of the Surgeon General, the Pentagon, Washington, D. C., to consider problems in neuropsychiatry and to make recommendations. Chairman of the meeting was former Brigadier General William C. Menninger, now clinical director of the Menninger Foundation, Topeka, Kan., and president of the American Psychiatric Association. Among the recommendations made were methods and procedures to liberalize ways and means by which reserve medical officers may earn point credits toward promotions; the promotion of first lieutenants, Medical Corps, to temporary grade of captain after completion of one year on active duty as an aid to procurement of physicians, and the imperative need for research in the field of preventive psychiatry and human resources. This group of forty consultants (psychiatrists and neurologists) represents all sections of the country.

AIR FORCE

COURSE IN AVIATION PHYSIOLOGY TO PROVIDE INSTRUCTORS

An aviation physiology course will open May 2 at the School of Aviation Medicine, Randolph Field, Texas. An increasing demand for the study and understanding of human physiologic tolerances and capabilities in aviation has created the need for instructors in these subjects. The pilots chosen for the instructors' course will be offered opportunities for further education in physiologic research and future assignments with the Aeromedical Laboratory at Wright Field, Dayton, Ohio, or at the School of Aviation Medicine, Randolph Field, Texas. Twenty pilots will be selected for the ten week course.

PUBLIC HEALTH SERVICE

EXAMINATION FOR APPOINTMENT IN THE REGULAR CORPS

A competitive examination for appointment of medical officers to the regular corps of the U. S. Public Health Service will be held at various points throughout the United States May 3-5. The time for filing application for the examination has been extended to April 4. Application forms and further information may be obtained by writing to the Surgeon General, U. S. Public Health Service, Washington 25, D. C., attention: Division of Commissioned Officers. These appointments are permanent in nature and provide opportunities for a lifetime career in clinical medicine, research and public health at Marine hospitals and other Public Health Service facilities. Appointments will be made in the grades of assistant surgeon and senior assistant surgeon, for which entrance pay is, with allowance for dependents, $5,011 and $5,551. Provisions are made for promotion at regular intervals up to and including the grade of senior surgeon and for selection for promotion to the grade of medical director at $9,751 per annum. Applicants must be citizens of the United States, at least 21 years of age and graduates of a recognized medical school.

COURSE IN LABORATORY DIAGNOSIS OF RABIES

A course in the laboratory diagnosis of rabies will be offered April 25-29 at the laboratories of the Communicable Disease Center, 605 Volunteer Building, Atlanta 3, Ga. Although open to all grades of employed laboratory personnel, first consideration will be given to the laboratories of state and local public health departments and other official agencies responsible for the diagnosis of rabies. There is no tuition or laboratory fee, but travel and living expenses must be paid by the student. Application should be made as far in advance as possible. A list of hotels and rooming houses will be sent to applicants at the time of acceptance.

PROFESSOR WARBURG A SPECIAL RESEARCH FELLOW

Professor Otto H. Warburg, director, Kaiser-Wilhelm Institute for Cell Physiology in Berlin, is now serving a six month special research fellowship at the National Cancer Institutes, Bethesda, Md. He will conduct experiments on photosynthesis to determine the relation of carbon dioxide assimilation, as a synthetic process, to cancer. Dean Burk, biochemist at the Institutes, who will work with Professor Warburg, said that the proposed research amounts to studying cancer metabolism in reverse. Photosynthesis (the food-making process in plants) is the conversion of carbon dioxide and water into sugar and oxygen in the presence of chlorophyll and light; in cancer cells, as in all animal cells, sugar and oxygen are converted back into carbon dioxide and water. However, unlike normal animal cells, cancer cells metabolize very inefficiently because their oxidation is incomplete; that is, they do not convert all their sugar into carbon dioxide and water and therefore do not release as much energy from sugar as do normal cells. Professor Warburg contends that interference with the respiration in growing cells (e. g., interference with the oxidation of sugar) is, from the standpoint of the physiology of metabolism, the cause of tumors. Professor Warburg's greatest contribution to science to date was his discovery that all cancer cells, when breaking down sugar, produce great quantities of lactic acid, even in the presence of air. He was awarded the Nobel Prize in 1931 for his work on cell respiration, tumor metabolism and photosynthesis.

OUTBREAKS OF INFLUENZA

The Influenza Information Center at the National Institutes of Health, Bethesda, Md., has received reports of a number of outbreaks of influenza; however, no serious epidemic of influenza has appeared in the United States during the present winter. The isolation of three strains of influenza virus was reported from sporadic cases in the Pittsburgh area December 4, all of the A' group; 2 cases of influenza B were reported at Fort Sill, Okla., Dec. 30, 1948. The diagnosis was established by serologic tests; 4 cases of type B influenza were diagnosed among troops at Fort Ord, Calif., January 14; on January 17 an outbreak of type B influenza was reported in Seattle. Outbreaks in various foreign countries varying from a few cases to 500,000 in Italy were reported to the Influenza Center during January. The Italian outbreak was, at least in part, due to the type B virus, while an extensive outbreak in France affecting about 20 per cent of the population was, at least in half of the cases, caused by type A strain.

SECOND SYMPOSIUM ON ANTIBIOTICS

The National Institutes of Health will sponsor a second national symposium on antibiotic research April 11-12 in Washington, D. C., in the auditorium of the Department of Agriculture. Scientists who wish to attend this symposium or have original unpublished observations to present should communicate with Dr. Leonard Karel, Executive Secretary of the Antibiotic Study Section, National Institutes of Health, Bethesda, Md. The first national symposium on antibiotic research was held two years ago, when thirty-seven papers were presented providing the latest information on streptomycin, penicillin, bacitracin and other antibiotics.

PERSONAL

Dr. Ralph Gregg, who has been with the Public Health Service since 1929, has been appointed Assistant Chief of the Foreign Quarantine Division of the Public Health Service.

VETERANS ADMINISTRATION

RESIDENCIES IN NEUROPSYCHIATRY

Openings are available at this time for July 1 appointment to the Veterans Administration residency training program in neuropsychiatry. This program is under the jurisdiction of the deans of the Boston medical schools (Harvard, Tufts, Boston University), and the training, which may be from one to three years, is given at: Cushing Veterans Administration Hospital, Framingham, Mass.; Bedford Veterans Administration Hospital, Bedford, Mass.; The Mental Hygiene Clinic of Boston, Regional Office of Veterans Administration, Boston; West Roxbury Veterans Administration Hospital, West Roxbury, Mass., and the White River Junction Veterans Administration Hospital, White River Junction, Vt.

All stations are within commuting distance of the Boston Psychoanalytic Institute, in the event applicants have been accepted for analytic training. For information write to: Dr. J. L. Hoffman, Chief of Professional Services, Bedford Veterans Administration Hospital, Bedford, Mass., or to Dr. Wilfred Bloomberg, Chief of Neuropsychiatric Service, Cushing Veterans Administration Hospital, Framingham, Mass.

FEWER VETERANS ON DISABILITY ROLLS

The Veterans Administration announces that the number of World War II veterans on the disability compensation rolls has declined steadily over the last twenty-one months from 1,733,328 to 1,640,656 on Jan. 31, 1949. The number of veterans in training under the G. I. Bill and Public Law 16 also decreased about 193,000 since Jan. 31, 1948.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ARKANSAS

Annual State Medical Meeting.—The annual session of the Arkansas Medical Society will be held at the Robinson Auditorium, Little Rock, April 14-16 under the presidency of Dr. Pearlie W. Lutterloh, Jonesboro. Out of state speakers include:

Hubert L. Allen, Alton, Ill., Rupture of the Pregnant Uterus.
Mr. Mac F. Cahal, Kansas City, Mo., Caution—Curves Ahead.
Edward S. Miller, Denver, Diagnosis and Treatment of Poliomyelitis.
George Crile Jr., Cleveland, Treatment of Diseases of the Thyroid.
A. Carlton Ernstene, Cleveland, Diagnosis and Treatment of Cardiac Arrhythmias.
R. Lee Clark Jr., Houston, Texas, Present Status of Cancer Therapy.

A scientific program will be presented by the faculty of the University of Arkansas School of Medicine, Little Rock, on Thursday afternoon, and an eye, ear, nose and throat section program will be held on Friday. The Woman's Auxiliary to the state society will meet at the Hotel Marion April 14-15.

CALIFORNIA

Typhus Drops 66 Per Cent.—After a year's intensive rodent control work by the Los Angeles City Health Department the incidence of typhus has dropped to less than one third of what it was in 1947. The health department has enforced city council ordinances which require: (1) ratproofing of buildings; (2) elimination of rat shelters; (3) ratproof storage of foods, and (4) extermination. To protect Los Angeles harbor the health department has working arrangements with the Harbor Department, which provides six men full time to cover the Wilmington–San Pedro district. A block by block control program to ratstop buildings and private property in the area where most of the cases of typhus have been reported has had great success. Special health department educational classes have been held for 125 pest control operators in the city and an educational program is currently being carried out.

COLORADO

Western Colorado Spring Clinics.—The Colorado State Medical Society's Western Colorado Spring Clinics will be held at Grand Junction April 23-24. Visiting speakers who will present papers both days are Drs. Philip Brown, Rochester, Minn.; Philip Thorek, Chicago, and George C. Griffith, Pasadena, Calif.

Children's Hospital Summer Clinics.—The Children's Hospital of Denver is offering June 29 to July 1 clinics, demonstrations, seminars and round table discussions of methods of diagnosis and treatment of diseases of infants and children. All of the specialty groups of the staff will participate in the program, which is designed for all physicians interested in children's diseases. Three guest speakers will augment the staff: Dr. Mitchell I. Rubin, professor of pediatrics, University of Buffalo, will participate in medical subjects; Dr. Wolf W. Zuelzer, professor of pediatric research at Wayne University College of Medicine, Detroit, in the hematologic and pathologic material, and Dr. Willis Potts, surgeon-in-chief of the Children's Memorial Hospital, Chicago. Registration will be limited to 75. Applications should be addressed to the Chairman of the Summer Clinics Committee, Children's Hospital, Denver.

ILLINOIS

Rabies in Suburbs.—Twenty-three rabid dogs had been reported in Cook County up to March 21 this year, which is more than twice the number for the corresponding period of 1948, when an all time record of 62 for the year was set. Suburban townships that have been quarantined for rabies which gives police authority to shoot all stray dogs on sight are Barrington, Bremen, Leyden, Lyons, Niles, Palos, Palatine, Proviso, Schaumberg, Thornton and Worth. Dr. Edward Piszczek, county health director, urges pet owners to have their dogs vaccinated against rabies.

Chicago

Kretschmer Memorial Lecture.—The eighth Edwin R. Kretschmer Memorial Lecture will be delivered at the Palmer House on Friday evening, April 29, by Dr. Maxwell M. Wintrobe, professor of medicine, University of Utah College of Medicine, Salt Lake City, on "Current Views Concerning the Nature and Management of Leukemia and Allied Disorders."

Special Meeting on Cancer.—A special meeting for cancer control month, sponsored by the Chicago Medical Society and the Illinois Division, American Cancer Society, will be held April 6, 8 p. m. at the John B. Murphy Memorial Auditorium. Dr. Charles B. Huggins, professor of surgery, University of Chicago School of Medicine, will speak on "Hormones and Cancer." Clarence C. Little, Sc.D., director, Jackson Memorial Laboratory, Bar Harbor, Maine, will speak on "Biological Research in Cancer."

Health Education Conference.—The Health Education Committee of the Welfare Council of Metropolitan Chicago and the Illinois State Department of Public Health are sponsoring a health education conference at the La Salle Hotel the morning of April 7. Among the speakers will be Dr. Iago Galdston, New York, executive secretary on medical information of the New York Academy of Medicine, who will speak on "Motivating Health Education"; Ben Park of the Chicago Industrial Health Association; Arthur Snider, science editor, *Chicago Daily News;* Thomas Jones, University of Illinois Research and Educational Hospitals, and T. Arthur Turner, managing editor, Medical Abstracts Service. The moderator will be Cyril O. Houle of the University of Chicago.

Personals.—Dr. Percival Bailey, professor of neurology and neurosurgery at the University of Illinois and former University of Chicago faculty member, was principal speaker at the annual faculty-student banquet for the graduating class of the University of Chicago Medical School March 17.——Dr. Herman L. Kretschmer, clinical professor of urology at the University of Illinois College of Medicine, has been awarded the Cross of the Chevalier of the Legion of Honor of France in behalf of his contributions to medicine and his efforts in having the Pasteur monument moved from Grant Park to Convalescent Park, opposite Cook County Hospital. Under his direction, funds totaling $25,000 were raised to transfer the monument erected in 1928 and presented to the city by medical groups and French descendants in Chicago. A road-widening project made removal of the monument necessary.

KENTUCKY

Dr. Schoenbach Visiting Professor.—Dr. Emanuel B. Schoenbach, associate professor of the department of preventive medicine, Johns Hopkins University School of Medicine, Baltimore, will serve as visiting commonwealth professor of medicine at the University of Louisville School of Medicine during the week of April 17-23. He will present a series of discussions on "The Mechanism of Actions and Indications for the Newer Antibiotics." He will also discuss "The Treatment of Rickettsial Infections" and "The Experimental Investigations on the Chemo-Therapy of Neoplasms."

Kentucky Physicians Service Plan.—Articles of incorporation for the Kentucky Physicians Service Plan have been filed by the Kentucky State Medical Association. This plan, which is the Kentucky State Medical Association's alternative to the government's proposed health insurance, must be approved by 51 per cent of the physicians in a county, by the state health department and by the State Director of Insurance before it can become effective. Dr. Oscar O. Miller, Louisville, Ky., who as chairman of the committee is responsible for completing arrangements for operation of the plan, heads the directors of the new corporation consisting of twenty other state physicians. Dr. Bruce Underwood, secretary of the Kentucky State Medical Association, is the resident agent of the corporation.

LOUISIANA

Special Meeting on Socialized Medicine.—The Louisiana State Medical Society called a special meeting February 20 in Alexandria to discuss the national compulsory health insurance program. The group was addressed by Dr. R. B. Robins, Camden, Ark., a member of the coordinating committee of the American Medical Association; Mr. Forest A. Harness of Kokomo, Ind., a former congressman, and Mr. John F. McCloskey, dean of the College of Pharmacy, Loyola University School of Pharmacy, New Orleans. A meeting of the house of delegates was held on Sunday afternoon and the house adopted a resolution reaffirming its stand against compulsory health insurance.

MARYLAND

Lecture on Blindness Prevention.—Dr. Haven Emerson, New York, will be the principal speaker at the annual luncheon meeting of the Maryland Society for the Prevention of Blindness April 27 at the Southern Hotel, Baltimore. He will discuss the relationship of the official and voluntary health agencies in the program of blindness prevention.

Dr. Ballentine Appointed to Johns Hopkins.—Robert Ballentine, Ph.D., of Rutgers University, New Brunswick, N. J., was recently appointed associate professor of biology at Johns Hopkins University, Baltimore. He has been assigned to nutrition research work with radioactive elements. He will join Dr. William D. McElroy of the biology department in research work under the university's $500,000 McCollum-Pratt fund for the study of the bearing which so-called trace elements in the soil have on the nutrition of men, plants and animals. Dr. Ballentine is a graduate of Princeton University, Princeton, N. J., and has been research fellow for the Rockefeller Institute and a Guggenheim research fellow.

MINNESOTA

University Cancer Center.—Of 1,454 persons examined at the University of Minnesota's Cancer Detection Center in Minneapolis during the first year of its operation, 801 were referred to their physicians for treatment of some physical abnormality, according to Dr. David State, director of the center. Of these persons 18 suffered some form of cancer and some were found to have other conditions requiring medical attention. Over 650 were free of any ailments. Doctors also detected 379 precancerous conditions which might turn into cancer, 186 benign tumors and 469 instances of noncancerous medical conditions. To accommodate more applicants the Cancer Detection Center will operate five days per week instead of on the two day basis which has been in effect. Almost 15,000 persons have applied, but the Center has a capacity of only 28 to 30 patients per week; under the five day service about 75 persons can be examined each week. No appointments for examinations are being made further ahead than six months. The center, open to Minnesota men and women 45 and over, is financed in part by the Minnesota Division of the American Cancer Society, the National Cancer Institute of the U. S. Public Health Service and the university's malignant disease research fund. A small share of the center's expenses has been derived from the $5 registration fee, which will be raised to $10 April 1.

MISSOURI

The Rev. Schwitalla Resigns as Dean.—The resignation of the Rev. Alphonse M. Schwitalla, S.J., Sc.D., as dean of the St. Louis University School of Medicine was announced in December. Necessitated by ill health, the resignation was effective immediately. Father Schwitalla completed his twenty-first year as dean of the school of medicine on December 3. In addition to serving the school in an advisory capacity, he plans to devote his attention to writing in the fields of medical and nursing education as well as of hospital administration. The Rev. Edward T. Foote, S.J., formerly assistant dean, has been named regent of the school of medicine.

Dr. Post Receives Dana Medal.—Dr. Lawrence T. Post, St. Louis, received the Leslie Dana Gold Medal for 1948, a national award given annually by the National Society for the Prevention of Blindness for outstanding achievement in the prevention of blindness and conservation of vision. Dr. Post was selected by the St. Louis Society for the Blind, through which the medal is offered on the recommendation of the Association of Research in Ophthalmology. The award was presented at a dinner March 25 in St. Louis. Dr. Post is professor of clinical ophthalmology and head of the department of ophthalmology at Washington University School of Medicine, St. Louis. He received his M.D. degree from Johns Hopkins University School of Medicine, Baltimore, in 1913. He has served as president of the American Academy of Ophthalmology and Otolaryngology and chairman of the Section on Ophthalmology of the American Medical Association.

NEW MEXICO

Clinical Society Lectures.—The New Mexico Clinical Society at its April meeting will hear Dr. Charles L. Martin, professor of radiology, Southwestern Medical College, Dallas, Texas, speak at the Veterans Administration Hospital in Albuquerque April 18 at 8 p. m. He will give an illustrated lecture on "The Treatment of Cancer of the Face, Lip and Mouth, and Metastatic Lymph Node with Irradiation."

NEW YORK

Clinical Day for Alumni.—The Alumni Association of the University of Buffalo School of Medicine will conduct its twelfth Annual Spring Clinical Day April 9 at the Hotel Statler, Buffalo. Among the speakers will be Drs. Harry M. Tiebout, Greenwich, Conn.; Harry M. Margolis, Pittsburgh; Maxwell Finland, Boston, and Nolan D. C. Lewis, George G. Deaver, and Irving S. Wright, all of New York.

Postgraduate Instruction.—The Medical Society of the State of New York with the cooperation of the New York State Department of Health has arranged a postgraduate lecture for the Herkimer County Medical Society to be given April 12, 5 p. m. at Prospect Hotel, Herkimer. Dr. John G. Fred Hiss, Syracuse, will speak on "Rheumatic Fever." The Geneva Academy of Medicine meeting at the Bellhurst Restaurant in Geneva April 21 at 8:30 p. m. will hear Dr. Harry Bakwin, New York, speak on "Clinical Child Psychology."

New York City

Seventh Harvey Lecture.—David Rittenberg, Ph.D., associate professor of biochemistry, Columbia University College of Physicians and Surgeons, will deliver the seventh Harvey Lecture of the current series at the New York Academy of Medicine April 21 on "Dynamic Aspects of the Metabolism of Amino Acids."

Long Island College Alumni Dinner.—The annual dinner of the Alumni Association of the Long Island College of Medicine will be held on April 30, 7 p. m. at the Columbus Club, 1 Prospect Park West, Brooklyn. The principal speaker will be Dr. Jean A. Curran, president of the Long Island College of Medicine.

Society Elections.—The Doctors Club of Brooklyn on January 22 installed Drs. David A. Meiselas as president, Bernard Seligman, treasurer, and Mortimer M. Kopp, secretary. Dr. Irwin E. Siris received an illuminated scroll for his outstanding service to the club and to the community and in honor of his accession to the presidency of the Medical Society of the County of Kings and the Brooklyn Academy of Medicine.—— The Bronx Pediatric Society has chosen the following officers for the current year: Drs. Nathan M. Greenstein, president, and George Weiss, secretary.

Dr. Haas Honored.—A golden jubilee luncheon for Dr. Sidney V. Haas, in recognition of his contributions to pediatrics and the completion of his fiftieth year of medical practice, will be held at the New York Academy of Medicine April 5. Speakers will include Robert Moses, park commissioner of New York City; Dr. Murray H. Bass, pediatrician, and Dr. Evan Evans. Dr. Haas will receive a Golden Book of Tributes from leaders throughout the world in pediatrics and related fields. Dr. Haas was a pioneer in celiac therapy and in the treatment of the hypertonic infant. The Medical Committee is made up of Dr. Evans, chairman, and Drs. George Baehr, Murray H. Bass, L. Emmett Holt Jr., Rustin McIntosh and Benjamin P. Watson.

Dr. Hinton Becomes Surgical Chief.—Dr. J. William Hinton, director of surgery at University Hospital, has been given additional duties as professor of surgery at Postgraduate Medical School, New York University–Bellevue Medical Center. In the new post he will also be director of the Fourth Surgical Division, Bellevue Hospital. Dr. John H. Mulholland remains as professor of surgery, New York University College of Medicine, and director of the Third Surgical Division, Bellevue Hospital. Under Dr. Hinton's direction, care of patients, teaching of doctors on a postgraduate level and various research projects will be carried out on the Fourth Surgical Division of Bellevue. A professor of clinical surgery on the New York University medical faculty since 1944, Dr. Hinton has been director of surgery at the former Post-Graduate Hospital since June 1947. He is a member of the Council, New York Surgical Society; chairman of the Committee on Applicants, American College of Surgeons, and chairman of the Committee on Professional Standards, New York Academy of Medicine. In 1946 and 1947 he was clinical professor on the medical faculty of Columbia University. He was graduated from the University of Virginia Department of Medicine, Charlottesville, in 1919.

Personals.—Dr. Samuel M. Wishik of the U. S. Children's Bureau, Washington, D. C., has been named director of the Bureau for Mothers and Young Children in the City of New York Health Department. Dr. Wishik, a graduate of the Columbia University College of Physicians and Surgeons, 1929, served with the city health department 1939-1942 and 1946-1947.——Dr. George M. Wheatley has been appointed a third vice president of the Metropolitan Life Insurance

Company and will be concerned with the supervision of the company's health and welfare activities. He is a graduate of Harvard Medical School, Boston, and has been with the company since 1941.——Dr. Frederic Wertham, director of the Lafargue Clinic in New York City and president of the Association for the Advancement of Psychotherapy from 1943 to 1947, was presented a Certificate of Merit for his outstanding contribution through the years to the Adult Education Program of the Queens Federation of Mothers' Clubs, Inc. This is the first such award the federation has made in the forty years of its existence.——Dr. William Antopol, Lyons, N. J., has been appointed director of laboratories of Beth Israel Hospital and director of research of the Joseph and Helen Yeamans Levy Foundation. The foundation was established in 1946 to conduct research. Dr. Antopol is director of laboratories and chief pathologist of the Newark Beth Israel Hospital at Lyons, N. J.

TENNESSEE

State Medical Meeting.—The Tennessee State Medical Association will hold its annual meeting at Read House, Chattanooga, April 12-13 under the presidency of Dr. Harley W. Qualls, Memphis. The tentative program lists the following guest speakers:

Thomas J. Dry, Rochester, Minn., Treatment of Congenital Heart Failure.
Col. James H. Forsee, Denver, Surgical Treatment of Malignant Lesions of the Gastro-Intestinal Tract.
David G. Miller Jr., Morgantown, Ky., For What Type Practice Should the Physician Be Trained?
Lawrence Reynolds, Detroit, Polypsis of the Colon.
Col. Elbert DeCoursey, Washington, D. C., Medical Aspects of Atomic Explosion.
Paul A. Davis, Akron, Ohio, Subject to be announced.

An obstetric symposium with Dr. Frank E. Whitacre, Memphis, as moderator will be presented by the obstetric staff of the University of Tennessee. The medical staff of Vanderbilt University, Nashville, will conduct a symposium on "Headaches of the General Practitioner," with Dr. Rudolph H. Kampmeier as moderator. Tuesday night session speakers include besides the president, Dr. Roscoe L. Sensenich, President, American Medical Association, South Bend, Ind., and Dr. Louis A. M. Krause, Baltimore.

TEXAS

State Medical Journal.—The *Texas State Journal of Medicine* appeared in January redesigned from the standpoint of cover, layout and typography. The blue and white cover printed in black ink utilizes the state insignia, the star, within which is an outline of the caduceus.

Scientific Meeting of Texas Rheumatism Association.—The Texas Rheumatism Association, founded in 1948, will hold its first scientific session May 2 in San Antonio. Guest speakers include: Drs. W. Paul Holbrook, Tucson, Ariz., president of the Arthritis and Rheumatism Foundation; Paul R. Lipscomb, orthopedic surgeon of the Mayo Clinic, Rochester, Minn.; James O. Finney, assistant professor of medicine in charge of the Arthritis Clinic, Medical College of Alabama, Birmingham, Ala., and William K. Ishmael, president of the Oklahoma Rheumatism Association, Oklahoma City.

VIRGINIA

Williams Memorial Lecture.—A group of residents who trained under Dr. Tiffany J. Williams when he was professor of obstetrics and gynecology at the University of Virginia Department of Medicine, Charlottesville, 1931-1947, have established a lectureship fund in his memory. The initial annual memorial lecture will be given at the university April 8 by Dr. Nicholson J. Eastman, Johns Hopkins Hospital, Baltimore.

Advisors to Division of Alcoholic Studies.—A committee of technical advisors for the state's new division of alcoholic studies and rehabilitation has been secured by the Virginia Department of Health. The committee will help with the medical and psychiatric aspects of the control of alcoholism. Members of the committee outside the state include Drs. Robert Fleming, Boston; Georgio Lolli, New Haven, Conn., and Joseph Hirsh, Birmingham, Ala. Members of the committee from the state include Dr. R. Finley Gayle and Dr. Harvey B. Haag, dean, the Medical College of Virginia at Richmond; Dr. William Porter of the Medical College of Virginia Hospital in Richmond; Dr. Henry B. Mulholland, assistant dean, University of Virginia Department of Medicine, Charlottesville; Dr. David C. Wilson, Charlottesville; Dr. Joseph E. Barrett, Richmond, and Dr. M. Pierce Rucker, president of the Medical Society of Virginia, Richmond. Earlier an advisory committee of laymen was named to assist the division in sociologic phases of the work.

WEST VIRGINIA

First Rheumatic Fever Clinic.—West Virginia's first rheumatic fever diagnostic clinic was opened at the health center in Fairmont March 10. The new clinic was made possible by close cooperation between the Marion County Medical Society and the county health department. It is estimated that the expenses for operating the clinic will be between $15,000 and $20,000 per year. The Marion County Medical Society will designate members who will be in charge of the clinic for a two month period throughout the year. The schedule for professional supervision has been completed for the remainder of the year. Over-all administration will be in charge of Dr. Claude L. Holland and Dr. Ormond L. Haynes, pediatricians, and Dr. A. Glenn Evans, county health officer. Drs. John P. Helmick, J. J. Jenkins Jr., Robert H. Jones and L. Rush Lambert have been named consultants. Patients will be accepted only on referral from the family physician. Arrangements have been made with Fairmont General Hospital for the care of children who are found to need hospitalization. Clinical services will include physical examination, fluoroscopy of the chest, chest roentgenograms, urinalysis, blood count, an electrocardiogram and a blood sedimentation test. A complete diagnosis with recommendations will be sent to the family physician. West Virginia is the twenty-sixth state to establish a diagnostic rheumatic fever clinic.

WISCONSIN

Chair of Medical History.—A new chair has been created in the Marquette University School of Medicine with the appointment of Dr. G. Kasten Tallmadge as professor of the history of medicine. Dr. Tallmadge is the first professor of medical history at Marquette. A Marquette Medical School faculty member for eighteen years, he is also an assistant professor of anatomy. In addition to a doctor of medicine degree, he holds the degrees of master of arts and doctor of philosophy.

State Society Begins Doctor Placement Service.—The Council on Medical Service and Public Relations of the State Medical Society of Wisconsin has developed a plan to encourage physicians to locate in areas of the state where they are most needed. At the time examinations are given by the State Board of Medical Examiners, each physician will be interviewed to find out whether he has decided where to practice or if he is looking for available location. If he has no definite plans, he will be advised of communities in Wisconsin that are interested in obtaining physicians' services. Details about the community, including schools, population, availability of hospital facilities, ambulance service and nursing care, housing, roads and other related facts gathered by members of the medical society, are available to interested physicians. Nearly thirty communities have filed information with the medical society. The plan was made available to nearly sixty applicants for licensure who took medical examinations at the January meeting of the board.

GENERAL

Special Society Meeting.—The annual meeting of the American Laryngological, Rhinological and Otological Society, Inc., will be held at the Drake Hotel, Chicago, April 18-20 under the presidency of Dr. John J. Shea, Memphis, Tenn. The guest of honor will be Dr. Claude C. Cody, Houston, Texas, who will speak on "Treatment of Carcinoma of the Larynx: A Statistical Study of Results." Others speaking by invitation are Drs. Hart E. Van Riper, New York; E. W. Alton Oschner, New Orleans; Herman J. Moersch, Rochester, Minn., and Robert Buxton, Ann Arbor, Mich. The president's reception and the annual banquet will be held Wednesday at 5:30 p. m.

Institute for Muscle Research.—A group of scientists headed by Dr. A. Szent-Györgyi, Bethesda, Md., is organizing an Institute for Muscle Research. The institute has a laboratory at the Marine Biological Laboratory at Woods Hole, where seven researchers are working. Another group is conducting research at the National Institutes of Health, Bethesda, Md. The research outside this institute is financed by the Muscle Institute, which attempts to collect funds and has received $25,000 from the American Heart Association. The institute was founded with the aim to provide means necessary for the continuation of Dr. Szent-Györgyi's research in the United States.

To Form Society in Forensic Sciences.—In January 1948 a group of forensic scientists met, at the invitation of Dr. Rutherford B. H. Gradwohl, in St. Louis, to consider the formation of a society devoted to the interests of forensic science. The gathering included medicolegal experts, pathologists, chemists, toxicologists, psychiatrists and those connected with police science laboratories. A second convocation of a Steering Committee was held in New York in October 1948.

Since that time Dr. Gradwohl has appointed committees which are preparing the way for an organizational meeting. Interested persons may secure further information from Dr. Gradwohl, 3514 Lucas Avenue, St. Louis, or Professor Ralph F. Turner, Michigan State College, East Lansing, Mich.

Lowest Infant Death Rate on Record.—The U. S. Public Health Service reports that the infant death rate in 1947 was the lowest on record and indications are that the 1948 infant death rate will be even lower. In 1947 119,173 babies died before reaching their first birthday, a proportion of 32.2 deaths for every 1,000 live births. In 1946 the rate was 33.8 for every 1,000 live births. The service estimated that the 1948 rate would be 31.8 for every 1,000 live births. According to the report, 75.7 per cent of infant deaths in 1947 could be traced to five causes: premature birth, 11.1; congenital malformations, 4.6; pneumonia and influenza, 3.6; injury at birth, 3.5, and asphyxia and atelectasis, 1.6. It was found that the death rate was higher among nonwhite babies (48.5) than among white infants (30.1) and higher for boys than for girls.

National Foundation for Cerebral Palsy.—At the first national public conference in New York on cerebral palsy the formation of the National Foundation for Cerebral Palsy was announced by Leonard Goldenson, president. The foundation will serve as "a clearing house of information, a coordinating agency and driving force" for cerebral palsy organizations throughout the country. Other officers of the foundation were listed as Mr. Arthur Larschan, New York, and Mr. Albert Felmet Jr., president of the New York State Cerebral Palsy Association, which sponsored the conference, and Mrs. James Killilea of Rye, chairman of the board. Mr. Larschan and Mrs. Killilea are vice presidents of the state organization. They and Dr. Foster Kennedy, chief of neurology at Bellevue Hospital, were the incorporators.

Society Elections.—The Southeastern Allergy Association at its annual meeting in Durham, N. C., in January, elected Dr. Oscar Swineford Jr., Charlottesville, Va., president, and reelected Dr. E. Katharine Baylis MacInnis, Columbia, S. C., secretary-treasurer. Dr. Lewis D. Hoppe, Atlanta, Ga., and Dr. G. Frederick Hieber, St. Petersburg, Fla., were elected executive committeemen at large. The 1950 meeting will be held in Columbia, S. C.——The International Academy of Proctology, 45-45 Kissena Blvd., Flushing, Long Island, N. Y., has chosen as its officers for 1949 Drs. Joseph H. Judd, M.D., Pittsburgh, international president; Mark L. Emerson, Oakland, Calif., president-elect; Edgar M. Scott Jr., Birmingham, Ala., secretary-general; Manuel G. Spiesman, Chicago, treasurer, and Alfred J. Cantor, Flushing, Long Island, N. Y., secretary. Information for affiliation with the academy may be obtained by writing to the secretary, Dr. Alfred J. Cantor, Flushing, Long Island.

Maternal Mortality Rate at New Low.—The final tabulation of the number of births in 1947, released by the National Office of Vital Statistics on Feb. 17, 1949, reports 3,699,940 births for 1947, a new high for the United States. At the same time a record low maternal death rate has been reached. In the Dec. 15, 1948 release of the National Office of Vital Statistics the number of maternal deaths for 1947 was given as 4,978. This results in a maternal mortality rate of 1.3 deaths per thousand live births. The most recent maternal mortality rates listed in the Summary of International Vital Statistics, 1937-1944, National Office of Vital Statistics, cite no annual rate as low as the one achieved by the United States in 1947. It is clear that the United States now ranks first among all nations or is very close to achieving this rank. The white maternal mortality rate for 1946 was 1.3. The gain in one year has been sufficient to reduce the national rate in 1947 to that of the white rate in the previous year.

Foundation Appoints Scholars in Medical Science.—Thirteen young scientists have been appointed as the second group of scholars in medical science, under the plan begun in 1948 by the John and Mary R. Markle Foundation to assist men and women wishing to remain in academic medicine. The scholars were selected from candidates nominated by accredited medical schools in the United States and Canada and interviewed by regional committees appointed by the foundation. The sum of $325,000 has been appropriated for their support, to be allotted in grants of $25,000 each at the rate of $5,000 a year, to the medical schools in which they now hold faculty appointments. A total of twenty-nine doctors have now received appointments as scholars. It is expected that fifty will be appointed during the five year program and that a total of $1,250,000 will be appropriated toward their support.

The thirteen scholars, all but one physicians, whose appointments begin in 1949, and the schools that will receive the $25,000 grants for their support are: Francis P. Chinard, clinical chemistry and physiology, Johns Hopkins University School of Medicine; Donald W. Fawcett, microscopic anatomy, Harvard Medical School; Allan V. N. Goodyer, internal medicine and cardiovascular disease, Yale University School of Medicine; John B. Graham, pathology, University of North Carolina School of Medicine, Chapel Hill; John D. Green, anatomy and physiology, Wayne University College of Medicine, Detroit; George Watson James III, internal medicine and physiology, Medical College of Virginia, Richmond; Ralph Jones Jr., clinical therapeutics, University of Pennsylvania School of Medicine; George E. Moore, surgery and oncology, University of Minnesota Medical School; C. Barber Mueller, surgery and biochemistry, Washington University School of Medicine, St. Louis; George W. Schwert Jr., Ph.D., physical biochemistry, Duke University School of Medicine, Durham, N. C.; Beverly T. Towery, internal medicine and endocrinology, Vanderbilt University School of Medicine, Nashville, Tenn.; W. Clarke Wescoe, pharmacology, Cornell University Medical College, New York, and Donald R. Wilson, internal medicine and endocrinology, University of Alberta Faculty of Medicine, Edmonton, Alberta, Canada.

CANADA

Dr. McCulloch Awarded Reeve Prize.—Dr. John C. McCulloch of the University of Toronto Faculty of Medicine has been awarded the Reeve Prize for his study in conjunction with Dr. Robert J. P. McCulloch on "A Hereditary and Clinical Study of Choroideremia." The award is made for the best scientific research accomplished in any department in the faculty of medicine by one who has held appointment on the staff not more than five years.

Dr. Weaver Named Dean at Canadian University.—Dr. Myron M. Weaver, assistant dean of medical sciences at the University of Minnesota, Minneapolis, has been chosen dean of the new medical school at the University of British Columbia, Vancouver, effective in July. Dr. Weaver, a graduate of Rush Medical College, 1932, is a specialist certified by the American Board of Internal Medicine and member of other scientific groups. His clinical specialties are studies in diabetes and nutrition.

CORRECTIONS

Research in Diarrheal Diseases.—A research project on diarrheal diseases is being carried on at the Louisiana State University School of Medicine, New Orleans, not at the Tulane University School of Medicine as was stated in THE JOURNAL, January 1, page 44.

University Honors Dr. Lehman.—In the January 22 issue of THE JOURNAL, page 241, the school at which Dr. Edwin P. Lehman is located should have been the University of Virginia Department of Medicine at Charlottesville and not the Medical College of Virginia at Richmond, as was stated in the news item. Dr. Lehman was honored for his twenty years of service as professor of surgery and gynecology at the university.

Marriages

CHARLES HYATT FIELD, Birmingham, Ala., to Miss Helen Virginia Minges of Rocky Mount, N. C., February 3.

MCKENZIE PARKER MOORE JR., Charleston, S. C., to Miss Amy Ashburn Lofton of McClellanville, November 6.

JOHN WOOD HAYDEN, Rochester, N. Y., to Miss Mary Phyllis Briddell of Crisfield, Md., December 28.

GEORGE WILLIAM WARE, Washington, D. C., to Miss Patricia Kirby Jay of Marion, N. C., January 29.

ROBERT G. EISENHARDT, Canisteo, N. Y., to Miss Annette Elizabeth Hull of Arkport, January 8.

JULIUS H. WINER to Miss Naomi Sari Borowsky, both of Beverly Hills, California, February 6.

GEORGE E. HOWELL, Meridian, Miss., to Miss Mathilde Turner of Atlanta, Ga., February 5.

HELEN S. BARNARD to Mr. J. Fred Boyd, both of Muskegon, Mich., in New York, February 5.

VIRGINIA MARIA FERRARA to Mr. John Marvin Cannon, both of Detroit, January 22.

REUBEN TURNER to Miss Veronica Mary Adkins, both of New York, recently.

Deaths

John Elmer Weeks ✠ Portland, Ore.; born in Painesville, Ohio, in 1853; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1881; for many years professor of ophthalmology and later professor emeritus at the University and Bellevue Hospital Medical College, now known as the New York University College of Medicine; in 1940 was appointed honorary professor of ophthalmology and later professor emeritus at the University of Oregon Medical School; in 1921 he established a scholarship for ophthalmologic research at the University of Michigan Medical School in Ann Arbor; specialist certified by the American Board of Ophthalmology and the Royal College of Physicians and Surgeons of Canada; in 1902 chairman of the Section on Ophthalmology and in 1910 and 1911 member of the House of Delegates of the American Medical Association, which in 1929 awarded him the Ophthalmic Research Medal for his contribution to the science of ophthalmology; past president of the American Ophthalmological Society and the New York County Medical Society; member of the American Academy of Ophthalmology and Otolaryngology, Association for Research in Ophthalmology and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; served during World War I; consultant in ophthalmologic surgery at Doernbecher Memorial Hospital for Children in Portland and the New York Eye and Ear Infirmary; co-discoverer with Dr. Robert Koch, of the Koch-Weeks bacillus which causes conjunctivitis; held honorary degrees from the University of Michigan, New York University and the University of Oregon; author of "Treatise on Diseases of the Eyes"; died in La Jolla, Calif., February 2, aged 95.

Alvin Clay McCall ✠ Asheville, N. C.; born in Marion, N. C., Oct. 10, 1889; University of Maryland School of Medicine, Baltimore, 1910; fellow of the American College of Surgeons; past president of the Buncombe County Medical Society; served overseas during World War I and during World War II on the district board of appeals of the Selective Service System; formerly member of the county board of health; charter member of the staff of Aston Park Hospital, which he was instrumental in organizing; on the staffs of the Mission and Biltmore hospitals; died December 2, aged 59, of coronary thrombosis.

Joseph Aarons, Detroit (licensed in Michigan in 1900); died January 7, aged 86, of gastrocnteritis.

Alanson Joseph Abbe, Winter Park, Fla.; Harvard Medical School, Boston, 1885; member of the American Medical Association and of the Massachusetts Medical Society; formerly on the staff of Union Hospital in Fall River, Mass.; died January 3, aged 87, of heart failure following renal colic.

Albyn Lincoln Adams ✠ Jacksonville, Ill.; Bennett Medical College, Chicago, 1886; College of Physicians and Surgeons, medical department of Columbia College, New York, 1889; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; affiliated with the Passavant Memorial Hospital, Our Saviour's Hospital and the Illinois School for the Blind; oculist and aurist to the Chicago and Alton Railroad; died January 31, aged 83, of cerebral hemorrhage.

Xeno F. Alexander, Dodge City, Kan.; Ensworth Medical College, St. Joseph, Mo., 1907; county health officer; member of the American Medical Association; died in the Murray Memorial Hospital January 7, aged 67, of coronary thrombosis.

Charles Walker Allen, Washington, D. C.; Jefferson Medical College of Philadelphia, 1903; member of the American Medical Association; on the staff of the George Washington University Hospital; died January 17, aged 69, of nephritis and endocarditis.

Joseph Elias Anderson, Moore, Okla.; Chattanooga (Tenn.) Medical College, 1896; died January 7, aged 79.

John Christian MacEvitt Auwerda, Brooklyn; Long Island College Hospital, Brooklyn, 1912; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; affiliated with the Brooklyn Eye and Ear Hospital, St. Mary's Hospital, Hospital of the Holy Family, Norwegian Lutheran Deaconesses' Home and Hospital and the Nassau Hospital in Mineola, N. Y.; died January 11, aged 60, of coronary thrombosis.

Ezra Robert Baldridge ✠ Terre Haute, Ind.; Eclectic Medical Institute, Cincinnati, 1896; on the staff of the Union Hospital; died January 15, aged 75, of coronary thrombosis with myocardial infarction.

Bart M. Ballenger, Strong City, Okla.; University of Tennessee Medical Department, Nashville, 1889; died in Elk City, January 17, aged 84.

Joseph J. Bansbach ✠ St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1898; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; affiliated with St. Joseph's and Methodist hospitals; member of the Welfare Board; died January 19, aged 72, of carcinoma of the lung.

Mark Adolph Baush ✠ Allentown, Pa.; Jefferson Medical College of Philadelphia, 1923; served during World War I; affiliated with the Allentown Hospital, where he died January 3, aged 51, of malignant hypertension.

John Sherrill Betz, Kansas City, Kan.; University of Michigan Medical School, Ann Arbor, 1937; member of the American Medical Association; served during World War II; on the faculty of the University of Kansas School of Medicine; affiliated with St. Margaret's Hospital, Bethany Hospital and Providence Hospital, where he died January 18, aged 39, of coronary occlusion with infarction.

Thomas Dalzell Blair, Watchung, N. J.; New York Homeopathic Medical College and Hospital, New York, 1903; member of the American Medical Association; served on the staff of the Muhlenberg Hospital, Plainfield, where he died January 2, aged 72, of carcinoma of the prostate.

George Elbert Bogart, Sherwood, Tenn.; Vanderbilt University School of Medicine, Nashville, Tenn., 1908; died in the Erlanger Hospital, Chattanooga, January 23, aged 65.

Louis Bothman ✠ Chicago; Rush Medical College, Chicago, 1917; clinical professor of ophthalmology at the University of Illinois College of Medicine; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; served during World War I; on the staff of St. Luke's Hospital; died January 19, aged 55, of chronic myocarditis.

Philip H. Bourne, Salamanca, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; member of the American Medical Association; past president of the Cattaraugus County Medical Society; examining physician for local draft boards during World Wars I and II; served as school physician, medical examiner for the Erie Railroad, and as health officer of Salamanca; for many years county coroner; died January 2, aged 79, of cerebral hemorrhage.

Albert Wellington Bridge, Tacoma, Wash.; University of Vermont College of Medicine, Burlington, 1905; died in the Tacoma General Hospital January 6, aged 69, of cerebral hemorrhage.

Edward Majors Brown, Chattanooga, Tenn.; Meharry Medical College, Nashville, 1919; died in the Veterans Administration Hospital, Tuskegee, Ala., January 13, aged 58.

William John Buck, Belle Glade, Fla.; Hering Medical College, Chicago, 1912; member of the American Medical Association; died January 14, aged 60.

Ina Van Derhoof Burt, Phelps, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1895; member of the American Medical Association; for many years health officer of the town and village of Phelps and affiliated with the State Teachers College in Fredonia; died in the Geneva (N. Y.) General Hospital January 2, aged 81, of cerebral hemorrhage.

John Harold Butts, Ellaville, Ga.; State University of Iowa College of Medicine, Iowa City, 1919; member of the Iowa State Medical Society and the American Medical Association; served during World War II; affiliated with St. Francis, Presbyterian and Allen Memorial hospitals in Waterloo, Ia.; died January 21, aged 54, of encephalomyelitis following rabies vaccination.

Hugh Carmichael ✠ Sacramento, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1934; associated with the Sutter Hospital; died January 13, aged 48.

Charles Hervey Carter ✠ Eastland, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1907; died in Ranger, January 22, aged 65, of cerebral hemorrhage and hypertension.

George Otis Castellaw, Commerce, Ga.; Atlanta College of Physicians and Surgeons, 1913; formerly councilman and

mayor; died January 23, aged 64, of carcinoma of the pancreas.

William Dennis Cawley, Elkton, Md.; University of Maryland School of Medicine, Baltimore, 1902; member of the American Medical Association; served during World War I; died January 11, aged 76, of acute coronary disease.

Irving Lee Chapman ✠ South Norfolk, Va.; Baltimore Medical College, 1904; city health officer; on the staffs of the Leigh Memorial Hospital and De Paul Hospital, where he died January 20, aged 69, of cerebral thrombosis.

Grover Cleveland Coakley, Pasadena, Calif.; Northwestern University Medical School, Chicago, 1904; died January 7, aged 65.

Llewellyn Rathbun Cole ✠ Madison, Wis.; University of Wisconsin Medical School, Madison, 1929; professor of clinical medicine and coordinator of graduate medical education at his alma mater, where he was director of the department of student health; served as director of the state medical society's radio series, the March of Medicine; fellow of the American College of Physicians; affiliated with the State of Wisconsin General Hospital; died January 1, aged 46, of subarachnoid hemorrhage.

Albert Wallace Cowan, Middlesboro, Ky.; Harvard Medical School, Boston, 1935; member of the American Medical Association; served during World War II; affiliated with Middlesboro Hospital, where he died January 30, aged 40, of carcinoma of the transverse colon.

Orville H. Cribbins, Sarasota, Fla.; University of Nashville Medical Department, 1906; member of the American Medical Association; affiliated with the Sarasota Hospital, where he died January 25, aged 68, of uremia and heart disease.

George Henry Crofton ✠ Washington, D. C.; College of Physicians and Surgeons, Baltimore, 1914; formerly associated with the U. S. Public Health Service reserve and the Veterans Bureau; died January 8, aged 60, of coronary occlusion.

Charles Henry Crooks, St. Augustine, Fla.; College of Physicians and Surgeons, Medical Department Kansas City University, 1904; Presbyterian Medical Missionary in North Thailand, for many years; member of the Thailand Medical Society, Royal Society of Tropical Medicine and Hygiene and the American Society of Tropical Medicine; died January 17, aged 73, of coronary thrombosis.

Frederick Edward Cunningham ✠ Chicago; Chicago College of Medicine and Surgery, 1912; died in New Orleans January 20, aged 63, of coronary occlusion.

Patrick Vincent Cunningham, Providence, R. I.; Baltimore Medical College, 1903; died in St. Joseph's Hospital January 22, aged 75, of chronic nephritis.

William Embury Dake, Rochester, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1898; affiliated with Genesee Hospital, Highland Hospital and the Convalescent Hospital for Children; died January 7, aged 74, of arteriosclerotic heart disease, carcinoma of the rectum and coronary infarction.

Arnold Drexel ✠ Wauwatosa, Wis.; University of Buffalo School of Medicine, 1889; an Associate Fellow of the American Medical Association; served on the staffs of Deaconess, Mount Sinai and St. Joseph's hospitals; died January 21, aged 85, of laryngeal carcinoma.

Frank Creighton Eastman, San Francisco; Stanford University School of Medicine, San Francisco, 1940; member of the American Medical Association; died in Vicksburg, Miss., January 14, aged 39, of heart disease.

Edwin James Evans, Ontonagon, Mich.; Detroit College of Medicine, 1896; formerly health officer of the Rockland township; served during World War I; died January 9, aged 77, of cerebral hemorrhage and arteriosclerosis.

Chester L. Farquharson, Houston, Texas (licensed in Texas in 1920); served during World War I; died January 24, aged 56, of cerebral thrombosis and uremia.

Oscar George Fegley, Yeadon, Pa.; Jefferson Medical College of Philadelphia, 1890; died in the Jefferson Hospital December 13, aged 81, of monocytic leukemia and uremia.

George MacIntire Ferguson, Philadelphia; Jefferson Medical College of Philadelphia, 1899; member of the American Medical Association; served during World War I; died in Joseph Price Memorial Hospital January 18, aged 74, of chronic myocarditis.

Paul Bernays Folger, Dobson, N. C.; Jefferson Medical College of Philadelphia, 1922; member of the American Medical Association; served in France during World War I; died in the Duke Hospital, Durham, January 15, aged 56, of cerebral hemorrhage.

Charles Bickley Fox, Monterey, Va.; University of Virginia Department of Medicine, Charlottesville, 1899; member of the American Medical Association; served as county coroner and as mayor; died in King's Daughters' Hospital, Staunton, January 26, aged 76, of hypostatic pneumonia and bronchiectasis.

William Robert Galbreath Jr., Shreveport, La.; Louisiana State University School of Medicine, New Orleans, 1939; member of the American Medical Association; served during World War II; on the staff of the North Louisiana Sanitarium; affiliated with the Veterans Administration Hospital in Jackson, Miss.; died in San Antonio, Texas, January 6, aged 38, of heart disease.

Sherwood P. Garrison ✠ Bellevue, Ky.; Miami Medical College, Cincinnati, 1905; fellow of the American College of Surgeons; served as president of the Campbell County Health Board; president of the nurses' training school, trustee and vice president of the Speers Memorial Hospital, Dayton, where he was on the staff and where he died January 27, aged 67, of acute leukemia.

Bruno J. W. Glaubitz ✠ Sheboygan, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1917; affiliated with St. Nicholas Hospital and Sheboygan Memorial Hospital, where he died January 14, aged 59, of coronary occlusion.

Frank Raymond Gomila Sr., New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1908; member of the American Medical Association; served as commissioner of public safety; affiliated with Hotel Dieu, Charity Hospital and French Hospital, died in the Baptist Hospital January 22, aged 61, of coronary occlusion.

Edward Phillip Gramer, Chicago; University of Illinois College of Medicine, Chicago, 1920; associate clinical professor of surgery at Loyola University College of Medicine; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; affiliated with St. Anne's Hospital, where he died November 25, aged 56, of myocardial infarction.

Lowell McKee Green ✠ Rushville, Ind.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; served during World War I; for many years county health officer; died January 3, aged 66, of coronary occlusion.

Edmund Harrison ✠ Greensboro, N. C.; University College of Medicine, Richmond, 1896; died December 13, aged 75.

Malcom A. H. Hart, Milton, N. H.; University of the City of New York Medical Department, 1888; member of the American Medical Association; president of the board of trustees of the Nute High School; died in Bedford, Mass., January 24, aged 87, of arteriosclerotic heart disease and thrombophlebitis of the left leg.

Thomas Irwin Henning, Glens Falls, N. Y.; L.R.C.P., London, England, and M.R.C.S., England, 1890; died in Glens Falls Hospital January 8, aged 85, of arteriosclerosis.

George Stevenson Holeman, Centerville, Calif.; University of Oregon Medical School, Portland, 1921; a member of the American Medical Association; affiliated with San Jose (Calif.) Hospital, where he died December 8, aged 61.

Allen H. Hostetter, Lincoln, Neb.; Rush Medical College, Chicago, 1886; died December 4, aged 90, of heart disease.

Fredd Chandler House, Detroit; Cleveland Homeopathic Medical College, 1901; died in the Highland Park (Mich.) Hospital January 24, aged 67, of retroperitoneal abscess and generalized arteriosclerosis.

Charles Francis Howland ✠ Des Moines; Northwestern University Medical School, Chicago, 1903; fellow of the American College of Surgeons; member of the staffs of the Iowa Methodist Hospital, Mercy Hospital and the Iowa Lutheran Hospital, where he died January 22, aged 69, of hemorrhage of stomach.

Josiah Herman Kirk ✠ Palo Alto, Calif.; Cooper Medical College, San Francisco, 1906; member of the American Academy of Ophthalmology and Otolaryngology; affiliated with the Palo Alto Hospital, where he died December 8, aged 69, of coronary occlusion.

William Evans Lester, Mullins, S. C.; Medical Department of Tulane University of Louisiana, New Orleans, 1911; member of the American Medical Association; served overseas during World War I; a member of the board of health; affiliated with the Mullins Hospital, where he died December 10, aged 60, of cerebral hemorrhage.

Mae Dillard McInnes-Pappas, West Frankfort, Ill.; Hering Medical College, Chicago, 1912; member of the American Medical Association; died December 15, aged 59, of coronary sclerosis.

William Thomas McLean ✠ Maroa, Ill.; Rush Medical College, Chicago, 1881; an Associate Fellow of the American Medical Association; died December 18, aged 90, of myocardial insufficiency and intestinal obstruction.

Bennett Andrew Melgaard, Sioux City, Iowa; Sioux City College of Medicine, 1908; died December 4, aged 67, of cerebral hemorrhage.

Eliza Johnson Merrick, Syracuse, N. Y.; Homeopathic Hospital College, Cleveland, 1884; died December 14, aged 91, of arteriosclerotic heart disease and carcinoma of the right breast.

George Brinton McClellan Miller ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1885; served on the staff of the Episcopal Hospital; died December 6, aged 84.

Benjamin Joseph Moss, Los Angeles; New York Homeopathic Medical College and Flower Hospital, 1910; died recently, aged 61.

Anthony Victor Nanna, New York; Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia, Italy, 1937; member of the American Medical Association; served during World War II; formerly on the staff of the Mother Cabrini Memorial Hospital; died recently, aged 35, of rheumatic heart disease.

Charles Leonard Overlander ✠ Boston; Harvard Medical School, Boston, 1905; fellow of the American College of Physicians; formerly lecturer at his alma mater and at the Tufts College Medical School; served as toxicologist for the Commonwealth of Massachusetts and biochemist for the Industrial Accident Board; for many years affiliated with the Brooks Hospital, Brookline, where he died December 16, aged 75.

Charles Freeman Perry, Block Island, R. I.; University of Pennsylvania Department of Medicine, Philadelphia, 1888; member of the American Medical Association; served on the staff of St. Joseph's Hospital in Providence; died in Wakefield, December 18, aged 80, of carcinoma.

Harry Wray Porter ✠ Atlanta, Ga.; Tulane University of Louisiana School of Medicine, New Orleans, 1925; member of the Florida Medical Association; associated with the Veterans Administration; served during World Wars I and II; died in Crawford W. Long Memorial Hospital recently, aged 63.

Loring Hay Raymond ✠ Somerville, Mass.; Harvard Medical School, Boston, 1903; fellow of the American College of Surgeons; on the staff of Somerville Hospital; died recently, aged 69, of cerebral hemorrhage.

William Alfred Ricard, Toledo, Ohio; Toledo Medical College, 1906; affiliated with Robinwood Hospital, where he died December 4, aged 74, of myocardial infarction and pulmonary embolism.

Carrie Elizabeth Rice, Wilton, N. H.; Boston University Medical School, 1900; died in the Sacred Heart Hospital, Manchester, December 1, aged 77, of pneumonia.

James Daniel Roberts, Beech Grove, Ky.; Louisville (Ky.) Medical College, 1907; died December 17, aged 77, of coronary thrombosis.

Samuel Rosenberg, New York; Long Island College Hospital, Brooklyn, 1905; died in Miami Beach, Fla., recently, aged 66, of cerebral hemorrhage.

Walter W. Seibert, Easton, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1900; president of the board of trustees of the Allentown (Pa.) State Hospital; died in St. Petersburg, Fla., December 13, aged 72, of angina pectoris.

Bertha Loveland Selmon ✠ Battle Creek, Mich.; American Medical Missionary College, Battle Creek and Chicago, 1902; formerly a medical missionary in China; past president of the Michigan Branch of the Medical Women's National Association; died in the Community Hospital January 25, aged 71, of intracranial hemorrhage and arteriosclerosis.

Charles Dodge Slagle ✠ Dayton, Ohio; Starling Medical College, Columbus, 1897; served during World War I; affiliated with Miami Valley Hospital; died December 2, aged 77, of arteriosclerotic heart disease.

James Davis Smith ✠ Collingswood, N. J.; Jefferson Medical College of Philadelphia, 1914; served on the staff of Cooper Hospital in Camden; died December 16, aged 69, of cardiac failure.

Oncey H. Smith, Ardmore, Okla.; University of West Tennessee College of Medicine and Surgery, Memphis, 1910; died recently, aged 65.

William Smith, Naples, Texas; Epworth College of Medicine, Oklahoma City, 1909; member of the American Medical Association; died January 16, aged 68.

Lucien Stark ✠ Norfolk, Neb.; John A. Creighton Medical College, Omaha, 1903; past president of the Nebraska State Medical Association, American Geriatrics Society and the American Association of Railway Surgeons; formerly member of the state board of health; served during the Spanish-American War and World War I; affiliated with the Chicago and Northwestern Railway and the Union Pacific Railroad; died in North Platte January 11, aged 66, of coronary thrombosis.

William Henry Starr, Blue Island, Ill.; St. Louis College of Physicians and Surgeons, 1904; for many years mayor of Crestwood; died December 16, aged 71, of coronary occlusion.

James Alexander Stewart, Brooklyn; New York Homeopathic Medical College, 1885; for many years on the staff of Peck Memorial Hospital; died in St. Agnes Hospital February 9, aged 90.

Harry E. Stowell, Peoria, Ill.; Reliance Medical College, Chicago, 1911; for many years practiced in Chicago, where he was affiliated with the board of health; died December 9, aged 64, of cardiac asthma.

Clinton Clement Straughn, Red Bank, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1896; member of the American Medical Association; on the staff of Fitkin Memorial Hospital in Neptune; died in Clearwater, Fla., January 24, aged 76, of coronary thrombosis.

Loren Gerald Strauss ✠ Wooster, Ohio; Western Reserve University Medical Department, Cleveland, 1921; affiliated with Community Hospital; died January 11, aged 53, of hypertension and nephritis.

William Lee Sumners ✠ Ridgely, Tenn.; College of Physicians and Surgeons, Memphis, 1907; past president of the Dyer, Lake and Crockett Counties Medical Society; died in Methodist Hospital, Memphis, recently, aged 70.

Charles Joseph Swalm ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1906; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; coroner's physician; on the staff of Jewish Hospital, where he died January 1, aged 64, of coronary thrombosis.

Arthur Van Dusen ✠ Astoria, Ore.; Northwestern University Medical School, Chicago, 1914; fellow of the American College of Surgeons; past president of the Clatsop County Medical Society; affiliated with St. Mary's Hospital, where he died January 18, aged 61, of heart disease.

DIED WHILE IN MILITARY SERVICE

John William Anderson, Nashville, Tenn.; College of Medical Evangelists, Loma Linda and Los Angeles, 1938; member of the American Medical Association; interned at the North Hudson Hospital in Weehawken, N. J.; served a residency at Vanderbilt University Hospital in Nashville; certified by the National Board of Medical Examiners; began active duty as a captain in the medical corps, Army of the United States, on June 1, 1942; served with the 69th Bombardment Squadron; died Sept. 10, 1945, aged 33, when his airplane was lost somewhere in the Pacific theater.

Joseph Assiof Corey, Waterbury, Conn.; Université de Genève Faculté de Médecine, Switzerland, 1938; affiliated with St. Mary's Hospital; captain in the medical corps, Army of the United States; died in Halloran General Hospital, Staten Island, N. Y., May 31, 1946, aged 39, of carcinoma of the stomach.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 12, 1949.

National Health Service Bill Passed in Australia

In 1940 the Australian Government began to prepare a scheme for a National Health Service and with the Australian branch of the British Medical Association entered into negotiations which have gone on ever since, but no agreement has been reached. Unlike the parent body at home the Australian branch rejected the government scheme and made a firm stand against it. The federal parliament has at last passed an act in spite of failure to obtain agreement with the British Medical Association. It provides a complete medical, dental and nursing service for all and medical education and research. Unlike the British service the Australian is not entirely free. The government proposes to pay 50 per cent of the fee charged by the doctor in accordance with a prescribed schedule.

The Australian branch of the British Medical Association wants the control of the service to be in the hands of a corporate body composed predominantly of doctors instead of under a director general of health as proposed by the government. It fears the encroachment of state control over all aspects of medical practice, particularly because the act allows the government to make regulations which would bring the whole medical profession under its complete control. At a meeting of the council it was held that no regulations should be promulgated unless they have first been approved by the corporate body. The council also pointed out that the system by which a doctor is to claim his fees for items of service rendered to patients involves a breach of his confidential relationship to patients. The clerical work and liabilities involved in acting as the agent for the patient in obtaining medical benefit are objectionable to practitioners. They would prefer a refund system by which the patient pays the whole fee to the doctor and claims a refund of half from the government. The council refuses to admit the right of the government to fix a fee of which it pays half.

The position has reached a complete impasse. The Minister of Health stated in a letter to the president of the Federal Council of the British Medical Association that the government has regretfully come to the conclusion that despite the splendid services rendered by the great number of practitioners "your association is grievously lacking in a sense of social responsibility. Having exhausted every endeavor to secure the cooperation of your Association, the Government does not intend that its proposals should be further delayed or frustrated by your Council or Association. I have to convey to you the decision of the Government that, within the limits of its constitutional power, the Government will proceed to put its plans into operation." The *Medical Journal of Australia* has made the comment: "The Government is determined to force on the people a piece of legislation that is foredoomed to failure."

This controversy between the British Medical Association and the government goes back as far as 1940. In 1941 the British Medical Association advocated a scheme providing for every person a general practitioner of his own choice, through whom consultant and laboratory services would be available. In July 1947 it offered to negotiate with the government on the basis of the following principles: (1) control by a corporate body; (2) no contract between the government and individual practitioners, and (3) payment on a fee for service basis. The *Medical Journal of Australia* of February 5 comments as follows: "The members of the medical profession cannot be expected to consent to take part in a service which, according to the expressly stated opinion of the Minister, has as its ultimate aim the abolition of private medical practice—in other words the denial of the freedom of the individual."

Excess of Cost of National Health Service Over Estimate

All the undertakings of the socialist government show one thing with melancholy monotony—increased cost. The official figures, just issued, for the National Health Service are no exception. The cost of doctors is $118,000,000, an excess of $9,200,000 over the estimate. The cost of dentists is $82,800,000, an increase of $54,600,000. The cost of pharmacists is $70,800,000, an increase of $20,000,000 over the estimate. The cost of opticians is $57,800,000, an excess of $15,000,000 over the estimate. A large part of this vast expenditure is wasted, as is so characteristic of socialist finance.

PARIS

(From Our Regular Correspondent)

Feb. 20, 1949.

Influenza Epidemic in France

The outbreak of the first cases of the present influenza epidemic in France dates back to Dec. 15, 1948. Apart from some districts in the South, which remained unaffected, on January 10, the whole of the country was involved. The epidemic reached its height on January 10, and, at the same time, the districts which were the first subjected to the epidemic already showed signs of regression. In general, the evolution of this influenza has remained benign, though convalescence has been slow. Complications, mostly bronchopneumonic, did not surpass 10 per cent. Severe, and even deadly, forms have been rarely noted in adults, but, to the contrary, frequent in old persons and infants.

Bacteriologic Researches

As from the onset of the epidemic, the Pasteur Institute has asked the practitioners, in order to facilitate research, to furnish two samples of serum from influenza patients: the first at the beginning of the disease and the second ten to twelve days later. P. Lepine, Chief of Service at the Pasteur Institute, Sautter, R. Reinie and J. Maurin have communicated to the Society of Biology the first results of their researches. In the great majority of cases, there is a virus of group A and especially group A' which might belong to the same antigenic group as the one isolated in 1947-1948 in England and in the United States.

R. Panthier, Mrs. Cataigne and C. Hannon have communicated to the Academy of Sciences the results of their researches concerning a strain named D. 48, isolated from the washings of a patient with severe influenza. The culturing has been effected through the amniotic route, in the fertilized egg. The authors have also demonstrated the possibility of growing this virus directly in the white mouse. The serologic study, made with experimental serums, has shown that this strain is not identical with the classic ones: A.PR 8, AWS or B. Lee. In the patient's blood, from which D. 48 has been isolated, the authors have noted, by the end of the disease, antibodies against this strain and also the absence of antibodies against classic strains. Andrewes has also observed in it antibodies against strain A 47 isolated in England. The authors have inoculated 2 young Cercopithecus monkeys, one with 0.5 cc. of the virulent allantoic fluid, the other with the same quantity of this fluid diluted ten times. The first inoculated monkey, on the point of dying, was killed forty hours after the inoculation. Autopsy showed a discolored liver, lung congested with

a beginning of hepatization of a lobe. The fluid of the bronchial washing contained, besides numerous polymorphonuclear leukocytes, large cells with a central nucleus filled with small vacuoles, similar to those found in the liquid of the tracheal washing of a 2 year old child who had died of pulmonary edema in the course of this epidemic. The second monkey, killed, when sick, three days after the inoculation, showed the same alteration in the liver; in the lung was edema with lardaceous hepatization, and in the bronchial washing there were numerous cells similar to the ones found in the infant patient.

Compulsory Vaccination in Certain Private and Public Institutions

The beginning of a smallpox epidemic, observed in 1947, and the effectiveness of a massive vaccination performed during this period have suggested to the Minister for Public Health the establishment of a new regulation for a compulsory vaccination against variola, typhoid, paratyphoid A and B, diphtheria and tetanus. This new law, published in the *Journal Officiel* on January 21, includes the public and private benevolent institutions for prevention or treatment, all sanitary services, nurseries, kindergartens, laboratories for medical analysis and the services of control at frontiers. All persons employed in any of these establishments are to be revaccinated within six months; persons having temporary or definitive medical contraindications are provisionally or definitely exempted. A special list is to be kept in each of these establishments and is to be presented when required by the control authorities.

Restoration of Professor Roussy's Good Name

The Academy of Sciences, and recently the National Academy of Medicine, have proposed that the name of Professor Gustave Roussy be given to the Villejuif Cancer Institute in order to perpetuate the memory of this great scientist, who died so tragically. The examination of the file concerning his case has revealed that the serious accusation made against him before the Civil Jurisdiction was groundless. In this way the Academy of Sciences and the National Academy of Medicine (of which he was perpetual secretary) desired to rehabilitate the name of Professor Roussy, late Vice-Chancellor of the Paris Academy.

OSLO

(From Our Regular Correspondent)

March 9, 1949.

Trouble Over National Health Insurance

Under a system of national health insurance, doctors in Norway are paid out of the insurance fund so many kroner for every consultation in the surgery, for every visit to a patient and for traveling expenses according to a scale of charges which varies with the mode of conveyance—motorcar, motorboat or "the Apostles' horses." Up to 1925, the insured patient paid the doctor nothing for these items. Since then he has had to pay a certain fraction of them himself, to ease the insurance fund directly and, by discouraging unnecessary consultations, indirectly. No one wishes to go back to the days when a doctor was often in doubt over what, if anything, to charge his poorer patients.

But what battles have been fought with the health insurance authorities by the Norwegian Medical Association over scales of charges! With the enormous rise in the cost of living, it was obvious that there must be a parallel, if not equal, rise in the doctor's charges. After much discussion agreement was reached on April 1, 1948, when it seemed that every one was satisfied with the new scale designed to meet some at least of the rise in the cost of living. But the Government had afterthoughts over the concessions made to the association, and it was recently announced that, as from Jan. 13, 1949, a new scale would be imposed on the doctors as a Government order. One of the most important differences between the two scales is that the latter fixes a hard and fast upper limit of charges, whereas the scale of April 1 was to be regarded merely as a guide to charges under ordinary conditions. Under extraordinary conditions these charges could be raised. The association has declared the Government's proposed action to be illegal and has threatened to go to law over it.

The conflict now shifted to Parliament, the Storting debating it in February with a certain liveliness. During the debate, the country's legislators were given ample opportunity to say all the nice and other things they thought about their doctors. On behalf of them one speaker pointed out that a specialist with an international reputation could hardly be expected to keep his charges within the narrow limits of the Government's new scale. On the other hand, it was argued that the legal action threatened by the association was a sign of arrogance on the part of a profession wishing to be in a class by itself, objecting to the restrictions imposed on all other members of the community. The word "dictatorship" was bandied about, and the debate ended in a unanimous recommendation to the Government to resume negotiations with the association. This means that there will now be a searching investigation of the justice of the claims of the association.

Whither the Practice of Medicine in Norway?

In a document recently issued, the Norwegian Labor Government has let it be known what it would like to plan for the future with regard to the health of the nation. It would like every patient to enjoy free medical treatment and to be free to choose his doctor. It would like the doctor to be paid in such a way that his income did not depend on the sickness of a given patient. In other words, it would prefer the English system of a fixed annual sum for every insured person instead of the present Norwegian system. It would also like to control the distribution of doctors so that sparsely populated areas do not suffer for lack of medical skill. The Government is also anxious to develop a system of remuneration which would stimulate doctors to keep the quality of their work up to a high standard.

Unfair Taxation of Young Doctors

With a logic reminiscent of Columbus and his egg, the Norwegian Government has introduced a tax the object of which is to pocket most of the rise in the capital value of its citizens during World War II. The war profiteer, active or passive, was to disgorge. This tax, so admirable in theory, hits many a young doctor hard. Let us take the medical student who had just qualified as a doctor early in 1940, and who started life with no capital. During the war his work might give him no hospital training, of which he was badly in need, but he was able to put by several thousand kroner which he earmarked for future postgraduate study spread over several years during which he would earn next to nothing. Is it surprising that he feels annoyed when the tax collector claims his savings?

An Asthma Survey

The Norwegian Association of Physicians appointed a committee early in 1948 to investigate asthma problems in Norway. According to the report recently issued by this committee there are no accurate figures concerning the frequency of this condition, but one of the committee's members has calculated that in Norway, with a population of a little over 3,000,000, there are some 12,000 persons with asthma, among whom there are about 700 adults entirely unfit for work on account of this disease. The others are more or less invalids. The committee reports on the available hospital accommodation for persons with asthma and recommends a much more systematic handling

of the asthmatic person's problems than hitherto. It is suggested to general practitioners that, while they continue to treat asthmatic persons, they would be well advised to invoke the aid of specialists in this field. For some two-thirds may achieve prolonged freedom from symptoms or at any rate considerable improvement if they can enjoy the benefits of up-to-date treatment given systematically and with due reference to the special needs of each case.

Correspondence

ANTABUS® FOR ALCOHOLISM

To the Editor:—As you know, a new approach to the medical management of alcoholism was recently reported in the Scandinavian as well as the British literature (*Acta pharmacol. et toxicol.* **4**: 285-321 [Dec.] 1948; *Lancet* **2**: 1001 [Dec. 25] 1948). The substance used was antabus,® a highly purified brand of tetraethylthiuramdisulfide specially prepared by Medicinalco, Copenhagen, Denmark. Antabus® is capable of producing pronounced physical discomfort when it is taken prior to the ingestion of alcohol and tends to create in the alcoholic patient a disinclination to drink. On this basis, its value as an adjunct to recognized psychotherapeutic measures has been suggested (*Lancet* **2**: 1004 [Dec. 25] 1948).

Because of the sociologic significance of this development, widespread interest has been aroused by the publicity which antabus® has received in the United States. This letter is sent to you with the thought that it may provide a means of informing the medical profession of the status of antabus® in this country.

Ayerst, McKenna & Harrison, Limited, have recently concluded arrangements with the Danish pharmaceutical firm, Medicinalco, for rights to manufacture and distribute antabus® in the United States.

Antabus® is considered a "new drug" under the terms of the Federal Food, Drug and Cosmetic Act of 1938, and cannot be released nationally for prescription use until the requirements of the Act are met.

In order to obtain the clinical and pharmacologic data necessary to comply with the regulations of the Food and Drug Administration, a series of controlled studies have been inaugurated, or are in the process of being established, in a selected number of institutions and clinics devoted to the study and treatment of alcoholism throughout the United States.

In view of the overwhelming number of requests for investigational material received from the medical professional at large, distribution must, of necessity, be restricted to the institutions or groups of investigators providing the most favorable conditions for the evaluation of the therapeutic effectiveness and toxic properties of antabus® on an extensive scale.

We are sorry that we cannot take advantage of all the offers of clinical assistance we have received, nor are we able to provide supplies of antabus® for investigational studies other than those which are scheduled within the present economy of this project. The cooperative understanding of the many physicians whose requests must be turned down is therefore solicited.

J. Murray Scott, M.D.
Medical Director,
Ayerst, McKenna & Harrison, Ltd.,
New York.

DETECTION OF DIABETES

To the Editor:—In regard to the most interesting letter of Dr. R. W. Brown of Ogden, Utah, regarding the advisability of placing into the hands of the laity a simple test for glycosuria to facilitate early and widespread detection of diabetes mellitus (The Journal, February 12, page 474), as Secretary of the American Diabetes Association I should like to call attention to the fact that this fascinating proposal is not new and has recently been called to the attention of the Council of the American Diabetes Association by the profession itself. It has been advised that just as the clinical thermometer, given by the profession to the laity, has been well used by the latter, so might a simple test for glycosuria made available to the entire population by the medical profession serve to break the problem of finding the unknown million persons with diabetes in this country. It has been pointed out that such a step would have such far reaching public health implications as to serve as one more concrete evidence that the medical profession is rightfully a custodian of the health of the people.

The plan presented for consideration by the Council of the American Diabetes Association was that manufacturers of simple tests for glycosuria be invited to present their products to the American Diabetes Association for use in connection with its year-round drive for detection of diabetes. One or more simple tests meeting the needs for rapid, easy determination of urine sugar, it was suggested, should be approved by the association. The publicity suggested was: "Are you one of the Unknown Million Diabetics in America? See your doctor or test your own urine by a simple method recommended by the American Diabetes Association! Ask your druggist." It was further suggested that these individual tests be sold at a small price over the drug counter. If the clinitest® type of tablet as suggested by Dr. Brown were used there would be included in each package printed suggestions: "Pass urine one and one-half hours after a heavy meal; if any color other than blue develops it means you have sugar or a sugar-like substance in your urine. *See your doctor for a diagnosis.* Remember that sugar in the urine does not necessarily mean that you have diabetes. Only your doctor, with the aid of further laboratory data, can evaluate the situation and make a diagnosis. This is a test only for sugar in the urine." It was alleged that the doctors and clinical pathologists of this country would see thousands of persons who presently do not know they have diabetes. The profession would be in a position to fight the disease in its early and possibly reversible stages or, at least, before any of the dire complications had developed. A by-product of the individual testing would be the stimulating of the patient to seek further health examination; to wit, "This is a test only for sugar in the urine."

The American Diabetes Association is an arm of the medical profession. All of its organized drive activities to find the unknown million persons with diabetes have to date been undertaken only in communities where the respective county medical societies have given their full approval. Under no conditions would the association depart from its policy of working for the common good, entirely through the channels of medicine.

The association would at this time invite not only editorial comment but also the point of view of the rank and file of the profession of which it is a part.

It is hoped that the following questions will be answered by the medical profession:

1. Should one or more such simple tests for glycosuria sponsored by organized medicine be placed in the hands of the public?

2. Would it be constructive for public health that the test for glycosuria in relation to diabetes be made analogous to that of spot roentgenographic surveys in tuberculosis detection?

3. Should the American Diabetes Association further explore and foster this proposed service?

Dr. Brown's letter is most timely and provocative. It is up to organized medicine to express itself in this matter.

GEORGE E. ANDERSON, M.D.,
Secretary, American Diabetes Association,
1 Nevins St., Brooklyn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various Centers. June 20-22, Sept. 12-14. *Part II.* April 25-26. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY, INC. *Written.* Various Centers. July 15: Final date for filing application is April 15. *Oral.* April 10-14 and Oct. 16-20. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 27.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral.* New York City, April 1-3. Sec., Dr. George M. Lewis, 66 East 66th Street, New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Philadelphia, June 1-3. *Written.* Oct. 17. Final date for filing application is May 1. Asst. Sec.-Treas. Dr. W. A. Werrell, 1 Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, June 1949. Sec., Dr. W. J. German, 310 Cedar Street, New Haven, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.: *Oral.* Chicago, May 8-14. Final date for filing application is April 1. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* New York, June 11-15; St. Louis, Oct. 15-19; Boston, December. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY. *Part I.* New York City, April 22-23; Atlanta, Ga., April 29-30; Indianapolis, May 6-7 and Denver, May 13-14. *Part II.* New York City, Jan. 1950. Final date for filing application for Part II is Aug. 15. Address: Dr. Francis M. McKeever, 1136 W. 6th St., Los Angeles 14, Calif.

AMERICAN BOARD OF OTOLARYNGOLOGY: New York, May 11-14; Chicago, Oct. 4-7. Sec., Dr. D. M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: Boston, April 12-13. Sec., Dr. Robert A. Moore, 507 S. Euclid Ave., St. Louis 10, Mo.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Baltimore, May 7-9. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Rd., Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE. Atlantic City, June 4-5. Sec., Dr. R. L. Bennett, 30 N. Michigan Blvd., Chicago.

AMERICAN BOARD OF PLASTIC SURGERY: Examinations are given in June and November of each year in the home town of applicants. Sec., Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH: Washington, D. C., May 14-16. Sec.-Treas., Dr. Ernest L. Stebbins, 615 North Wolfe St., Baltimore.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC. December, New York City. Sec., Dr. F. J. Braceland, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY. Atlantic City, June 2-4. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written.* Various Centers, October 26. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: Feb. 1950. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 18, Minn.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 28-30. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

ARKANSAS: * Little Rock, June 9-10. Sec., Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 9-10. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination.* San Francisco, June 20-23. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento.

COLORADO: * *Endorsement,* Denver., April 5. *Written,* Denver, June 20-22. Sec., Dr. W. W. King, 831 Republic Bldg., Denver 2.

DELAWARE: Dover, July 12-14. Sec., Dr. J. S. McDaniel, 229 South State St., Dover.

DISTRICT OF COLUMBIA: * *Written,* Washington, May 9-10. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., Washington.

FLORIDA: * *Examination,* Jacksonville, June 26-28. Sec., Dr. Frank D. Gray, 12 N. Rosalind Ave., Orlando.

GEORGIA: *Examination.* June 8-9, Atlanta and Augusta. *Reciprocity.* Atlanta, June. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

GUAM: *Endorsement.* Agana, Last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam. % F.P.O., San Francisco, Calif.

HAWAII: * *Examination.* Honolulu, July 11-14. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu.

IDAHO: Boise, July 11-13. Sec., Miss Estella S. Mulliner, Bureau of Occupational Licenses, 355 State House, Boise.

ILLINOIS: Chicago, April 12-14. Supt. of Registration, Mr. Fred W Ruegg, Capitol Bldg., Springfield.

INDIANA: *Examination.* Indianapolis, June 21-23. Sec. Board of Medical Registration and Examination. Dr. Paul R. Tindall, 416 K. of P. Bldg., Indianapolis.

IOWA: * *Examination.* Iowa City, June 13-15. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: Kansas City, June 1-2. Sec., J. F. Hassig, 905 North 7th St., Kansas City, Kans.

KENTUCKY: *Examination.* Louisville, June 15-17. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville 2.

MARYLAND: *Examination.* Baltimore, June 21-24. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 14-15. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

MINNESOTA: * Minneapolis, April 19-21. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: Jackson, June 21-22. Asst. Sec., Dr. R. N. Whitfield, State Board of Health, Jackson.

MISSOURI: *Examination.* St. Louis, May 30-31 and June 8-10. Exec. Sec., Mr. John A. Hailey, Box 4, Jefferson City.

MONTANA: Helena, April 4-6. Sec., Dr. O. G. Klein, First National Bank Building, Helena.

NEBRASKA:* *Examination.* Omaha, June 6-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humbie, 1009 State Capitol Building, Lincoln 9

NEVADA: Carson City, May 2. Sec., Dr. G. H. Ross, 112 N. Curry Street, Carson City.

NEW JERSEY: *Examination.* Trenton, June 21-24. Sec., Dr. E. H Hallinger, 28 West State Street, Trenton 8.

NEW MEXICO: * Santa Fe, April 11-12. Sec., Dr. V. E. Berchtold, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1, Sec., Dr. Jacob L. Lochner, 23 South Pearl St., Albany.

NORTH CAROLINA: *Endorsement.* Pinehurst, May 9. *Examination.* Raleigh, June 23-25. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: * *Written,* Grand Forks, July 5-7. *Reciprocity,* Grand Forks, July 8. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Endorsement.* Columbus, April 5. *Written.* Columbus, June Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, June 8-9. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: * *Endorsement.* Portland, April 29-30. *Examination.* Portland, July. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, July. Acting Sec., Mrs. B. G. Steiner, 351 Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 6-10. Sec., Dr. Luis Cueto Coll, Box 3717, Santurce.

RHODE ISLAND:* *Examination.* Providence, April 7-8 and July 7-8. Chief, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: *Examination.* Columbia, June 27-29. *Endorsement.* Columbia, March 7, April 4, May 2, June 27-28, Aug. 1, Sept. 5 and Oct. 3. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * *Examination.* Pierre, July 19. Sec., Dr. G. J. Van Heuvelen, Capitol Bldg., Pierre.

TEXAS: *Examination.* Austin, June 16-18. Sec., Dr. M. H. Crabb. 209 Medical Arts Bldg., Fort Worth 2.

UTAH: *Examination.* Salt Lake City, July. Sec., Dept of Registration. Miss Rena B. Loomis. 324 State Capitol Bldg., Salt Lake City.

VIRGINIA: *Examination.* Richmond, June 17-18. *Reciprocity.* Richmond. June 16. Dr. K. D. Graves, 631 First St., S.W., Roanoke.

WASHINGTON: Seattle, July. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

WEST VIRGINIA: Charleston, April 7-9. Sec., Dr. N. H. Dyer, State Capitol, Charleston 5.

WISCONSIN: * *Examination.* Milwaukee, June 28-30. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, June 20. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: *Examination.* Little Rock, May 3. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

COLORADO: *Examination.* Denver, June 1-2. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: New Haven, June 11. Exec. Asst., State Board of Healing Arts, Miss Mary G. Reynolds, 110 Whitney Ave., New Haven 10.

DISTRICT OF COLUMBIA: *Examination.* Washington, April 18-19. Sec., Dr. George C. Ruhland, 4130 Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, June 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: *Examination.* Des Moines, April 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Detroit and Ann Arbor, May 13-14. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing 15.

MINNESOTA: *Examination.* April 4, June and Oct. Sec.-Treas., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis.

OKLAHOMA: April 15. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: Portland, June 18, Sept. 3 and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

SOUTH DAKOTA: Vermillion, June 3-4. Dr. G. M. Evans, 310 E. 15th St,. Yankton.

TENNESSEE: Memphis, July 8-9. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

WISCONSIN: Milwaukee, June 4. Sec., Prof. W. H. Barber, Ripon College, Ripon.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

36:641-800 (Nov.) 1948

*Amount of Digitoxin (Digitaline Nativelle) Required for Adequate Digitalization. H. J. Stewart and A. A. Newman.—p. 641.
Continuous Observations of Arterial Oxygen Saturation at Rest and During Exercise in Congenital Heart Disease. G. E. Montgomery Jr., E. H. Wood, H. B. Burchell and others.—p. 668.
Coronary Artery Disease in Men Eighteen to Thirty-Nine Years of Age: Report of 866 Cases, 450 with Necropsy Examination. W. M. Yater, A. H. Traum, W. G. Brown and others.—p. 683.
*Clinical Evaluation of Veratrum Viride in Treatment of Essential Hypertension. E. D. Freis and J. R. Stanton.—p. 723.
Effect of Posture Upon Axis Deviation in Human Bundle Branch Block. A. M. Jones and H. Feil.—p. 739.
Determination of Levo- and Dextrocardiogram. M. Segers.—p. 751.
Further Experience with Thromboangiitis Obliterans in Women. S. Silbert.—p. 757.
Case of Paradoxical Embolism. C. A. Ross and P. H. Sprague.—p. 772.
*Extreme Bradycardia: Report of Case Exhibiting Ventricular Rate of Less Than Twelve per Minute. J. C. Doane and S. O. Krasnoff.—p. 777.

Amount of Digitoxin for Adequate Digitalization.—In their studies on digitoxin Stewart and Newman chose patients with auricular fibrillation because the slowing of the ventricular rate is a satisfactory guide to digitalis effect. Their investigations were made on 26 patients and included two phases: (1) The hospital records of all patients from 1942 to 1946 having auricular fibrillation who received digitoxin were reviewed to ascertain the effect of this drug on ventricular rate, and (2) observations were made on the amount of digitoxin required to produce full digitalization in patients with auricular fibrillation. The average amount of digitoxin required for adequate digitalization in this series was around 2.0 mg. if given in twenty-four hours. There is no difference whether the drug is given in one single dose or in divided doses. When adequate slowing of the heart is attained, nausea and vomiting occur more frequently with digitoxin than with the whole leaf. The average maintenance amount of digitoxin is between 0.1 and 0.2 mg.; 0.2 mg. is too much in most patients who have been adequately digitalized. It is more difficult to keep patients in equilibrium by maintenance doses of digitoxin than with the whole leaf. Although large amounts of the drug in a single dose were given in this series of patients in order to arrive at the digitalizing amount in twenty-four hours, this procedure is not recommended for general use. Since digitalization with divided doses of digitoxin is effective in patients with auricular fibrillation, the same system of dosage can be transferred to patients with normal rhythm in whom the heart rate does not serve as a guide. In hyperthyroidism with auricular fibrillation, larger amounts of digitoxin are required to achieve slowing of the ventricular rate than in patients with normal basal metabolic rates, an experience which is similar to that observed when the whole leaf is used.

Veratrum Viride in Hypertension.—Freis and Stanton report the results of a clinical trial of Veratrum viride in 40 patients with hypertension. The substance was administered orally in the form of the whole powdered mixture of alkaloids. When the drug was administered by the oral route, the hypotensive effect began to appear at the end of one or two hours, reached a maximum in four or six hours and largely disappeared by the end of fourteen hours. In order to obtain maximum therapeutic benefit and to avoid toxic reactions resulting from cumulative overdosage, the drug was administered at dosage intervals of twelve hours. In addition, in order to provide greater therapeutic safety, this dosage interval was further subdivided so that no more than 10 Craw units were ingested per hour. The great variability of response to a given dose in different persons required the gradual increase of dosage in each patient in order to avoid toxic side effects. Veratrum was found to be a useful therapeutic agent in the treatment of patients with (*a*) "hypertensive crisis," (*b*) severe long-standing hypertensive disease which proved resistant to other forms of treatment and (*c*) hypertension complicated by cardiac failure. Prolonged therapy in some cases resulted in a diminution in cardiac size and reversal of electrocardiographic changes toward normal. There were no deaths and no toxic reactions resulting in more than transient disability. However, the development of side effects and of changing sensitivity to a given dose were sufficiently frequent to limit its usefulness in the treatment of patients with mild or moderate degrees of hypertension. Veratrum viride appeared to have therapeutic value as an adjunct to dietotherapy and to the routine treatment of hypertensive heart disease.

Extreme Bradycardia.—Doane and Krasnoff present a patient with complete heart block whose ventricular rate during the last twelve hours of his life varied from 12.5 to 9.8 beats per minute. The probable causative pathologic factor was calcific deposits involving the auriculoventricular node and the right and left branches of the bundle of His. It appeared that ephedrine was a useful drug in increasing the ventricular rate and in lessening the frequency of the Stokes-Adams syndrome. As far as the authors have been able to discover, this patient exhibited the slowest ventricular rate ever recorded by the electrocardiograph in man.

American J. Obstetrics and Gynecology, St. Louis

56:821-1020 (Nov.) 1948. **Partial Index**

Diethylstilbestrol in Prevention and Treatment of Complications of Pregnancy. O. W. Smith.—p. 821.
Renal Response to Thermal Stimulus. L. D. Odell, G. T. Aragon and R. C. Smitter.—p. 835.
*Elderly Primiparas. W. F. Geittmann, J. E. Fitzgerald and B. P. Zummo.—p. 846.
Vitamin B Complex in Neonatal Feeding. S. C. Kasdon and E. L. Cornell.—p. 853.
Permeability of Human Placenta to Water and Supply of Water to Human Fetus as Determined with Deuterium Oxide. L. M. Hellman, L. B. Flexner, W. S. Wilde and others.—p. 861.
Puerperal Perigenital and Perineal Hematomas. F. J. Walsh and H. I. Ganser.—p. 869.
Clinical Study of Natural Childbirth: Preliminary Report from a Teaching Ward Service. F. W. Goodrich Jr. and H. Thomas.—p. 875.
Study of Thymus in 7,400 Consecutive Newborn Infants. E. A. Conti and G. D. Patton.—p. 884.
Amenorrhea and Oligomenorrhea, Etiology and Treatment. W. Bickers.—p. 893.
Ovulation Studies with Direct Current Potentials. H. F. Newman.—p. 901.
Review of Ovarian Pathology in 336 Laparotomies. Mary DeWitt Pettit.—p. 907.
Clinical Use of Sodium Vinbarbital by Intravenous Route in Obstetrics. L. G. Fournier.—p. 913.
Clinical Evaluation of Dienestrol in Climacteric. J. G. Viviano.—p. 921.
Report on 510 Cases of Classical Cesarean Section. A. C. Williamson.—p. 925.
Technic for Re-establishing Tubal Patency. C. T. Beecham and M. D. Sigman.—p. 935.
In Defense of Uterine Interposition Operation. L. Brady.—p. 939.
Le Fort Colpocleisis: Analysis of 43 Operations. C. Mazer and S. L. Israel.—p. 944.
Circular Prolapse of Urethra. J. H. Zeigerman and R. A. Kimbrough Jr.—p. 950.
Chemical Test for Pregnancy. W. A. Ricketts, R. M. Carson and R. R. Sacks.—p. 955.
Intervillous Thrombi in Placenta and Their Possible Relation to Erythroblastosis Fetalis. Edith L. Potter.—p. 959.
Extrauterine Pregnancy at Term with Delivery of Normal Living Child and Living Mother. F. S. Deming.—p. 962.
Mesodermal Mixed Tumors of Uterus. E. C. H. Schmidt and R. B. Schutz.—p. 966.
*Peptic Ulcer in Pregnancy. J. B. Bernstine and M. H. F. Friedman.—p. 973.
Vagitus Uterinus in Twin Pregnancy with Prolapsus Funis and Its Treatment Under Continuous Caudal Analgesia. J. G. Crotty and L. W. Kuehnle.—p. 977
Adenocarcinoma of Uterine Fundus in Identical Twins. J. P. Palmer and R. W. Mitchell.—p. 981.

Elderly Primiparas.—Geittmann and his associates report a study of elderly primiparas, 35 years of age and over, taken from the records of St. Luke's and Cook County Hospitals in Chicago, Ill. The cases from Cook County are those of charity service and those from St. Luke's are predominantly

private cases. The patients were pregnant seven months or more and had viable babies on admission to the hospital. Elderly primiparas occur five times more frequently in the private series than on a charity service. Breech presentation occurred twice as often in elderly primiparas as in all cases. Only one multiple pregnancy and one shoulder presentation occurred in 417 cases of elderly primiparas. The maternal death rate was 0.46 per cent in elderly primiparas at St. Luke's as compared with 0.2 per cent in all cases, while at Cook County it was 0 per cent as compared with 0.15 per cent in all cases. Corrected fetal mortality was 0.9 per cent and 3.94 per cent, respectively, at St. Luke's and Cook County hospitals, as compared with 1.3 per cent and 2.04 per cent in all cases. Preeclampsia, hypertensive toxemia and fibroids are the most common complications of pregnancy in elderly primiparas. Prolonged labor occurred in 23.3 per cent of the elderly patients at St. Luke's and 12.8 per cent at Cook County. Postpartum hemorrhage occurred more frequently in elderly primiparas at St. Luke's, where there was a higher operative incidence. Approximately 80 per cent of the elderly primiparas will deliver vaginally and 75 per cent of these with short or average labors. The cesarean section rate was 18.2 per cent at Cook County and 22.4 per cent at St. Luke's, as compared with 2 per cent and 4.4 per cent in all cases.

Peptic Ulcer and Pregnancy.—Bernstine and Friedman report 3 cases which indicate that if progesterone is administered to pregnant women to prevent threatened abortion there is likelihood that if the woman has a history of peptic ulcer the ulcer may become aggravated. Duodenal ulcer occurs less frequently in women than in men and is a rare complication of pregnancy. In women known to have had peptic ulcer, its symptoms almost always disappear with the advent of pregnancy. In the 3 reported cases, the history suggested or proved the existence of an ulcer prior to pregnancy. The ulcer symptoms abated during the early stages of the pregnancy in all 3 women; yet the later administration of progesterone was followed in each case by an aggravation of the ulcer, by hemorrhage and a stormy course almost terminating fatally. An endocrine basis has been suggested for peptic ulcer and investigators have reported beneficial effects with gonadotropin. The relationship between progesterone and gonadotropin is such as to indicate possible antagonism between them. The beneficial effect of gonadotropin on peptic ulcer would suggest the adverse action of progesterone.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

60:587-722 (Nov.) 1948

Small Intestinal Motility in Acute Dysentery. G. P. Keefer.—p. 587.
Pyloric Obstruction More Accurately Demonstrated by Food-Barium Mixture. V. W. Archer and G. Cooper Jr.—p. 593.
Carcinoma of Stomach: Its Incidence and Detection. B. R. Kirklin and J. R. Hodgson.—p. 600.
Roentgenologic Significance of Hamartoma of Lung. W. C. Hall.—p. 605.
*Calcified Omental Fat Deposits: Their Roentgenologic Significance. J. F. Holt and R. S. MacIntyre.—p. 612.
*Post-Irradiation Neuropathy. M. M. Greenfield and F. M. Stark.—p. 617.
Multiple Osteogenic Sarcoma: Report of 2 Cases. A. J. Ackerman.—p. 623.
Osseous Dysplasia and Dystrophy of Nails: Review of Literature and Report of Case. R. A. Mino, V. H. Mino and R. G. Livingstone.—p. 633.
Roentgen Demonstration of Calcification of Cardiac Skeleton and Coronary Vessels in the Living. H. G. Koiransky and I. K. Ettman.—p. 642.
Angiocardiography Utilizing Photoroentgen Apparatus with Rapid Film Changer. H. L. Temple, I. Steinberg and C. T. Dotter.—p. 646.
Evaluation of Phlebography of Normal Lower Extremity. B. S. Epstein, M. G. Wasch and L. Loewe.—p. 650.
Cholecystocolic Fistula Diagnosed by Roentgen Examination: Case Report and Review. D. L. Jenkinson and H. M. Lowry.—p. 658.
Use of Roentgen Ray in Body Measurements: Mathematical Method: Preliminary Report. L. O. J. Manganiello.—p. 664.
Theory and Technic of Simultaneous Tomography. M. de Abreu.—p. 668.

Calcified Omental Fat Deposits.—Holt and MacIntyre observed several patients in whom roentgenograms of the abdomen have shown confusing areas of calcification. They cite 4 cases. The deposition of calcium salts in omental fat is probably the result of (1) local interference with blood supply, (2) inflammatory or traumatic pancreatic fat necrosis, or (3) any infectious process causing caseation necrosis. Neither calcified omental fat deposits nor calcified epiploic appendages have a typical roentgenographic appearance. Like pathologic calcification of fat occurring in many other portions of the body, these abdominal concretions are round or oval in shape, and have a greater concentration of lime salt in their outer margins than in their central portions. This feature is of little value in differentiating omental fat deposits from gallstones and fecaliths of appendix and small intestine, but it is helpful in excluding urinary tract calculi, calcified lymph nodes, and other forms of intra-abdominal calcifications which have a different and sometimes characteristic roentgenographic appearance. One of the most instructive features is the great mobility of the greater omentum. Omental calcifications have been identified roentgenographically in widely separated regions of the abdomen within a relatively short span of time.

Postirradiation Neuropathy.—Greenfield and Stark report on 180 cases of carcinoma of the testis treated with intensive million volt roentgen therapy to the retroperitoneal node-bearing area following simple or radical orchectomy. The use of roentgen rays generated at 1,000,000 volts made possible the delivery of much larger doses to the retroperitoneal nodes and adjacent deep tissues than had been previously employed. In 3 patients a peculiar neurologic disturbance developed. They showed a strikingly similar clinical picture. The first muscular weakness in the lower extremities was noted from three to five months after completion of the roentgen therapy. Progression was slow but continuous for about one year, with tendency for the condition to level off and become stationary after that time. There was a flaccid paralysis of the lower extremities without sensory loss. The chief site of nerve injury was believed to be the anterior horn cells in the lumbosacral segments of the spinal cord.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

32:509-638 (Nov.) 1948

*Treatment of Late Symptomatic Neurosyphilis at Boston Psychopathic Hospital: Study of Results of Penicillin Therapy in 394 Patients Treated Between February, 1944 and March, 1948. I. Kopp, A. S. Rose and H. C. Solomon.—p. 509.
*Long-Term Results in Neurosyphilis Treated with Penicillin Alone. J. H. Stokes, M. S. Falk and G. D. Gammon.—p. 521.
*Neurosyphilis: Evaluation After Two Years of Treatment with Penicillin Alone and with Combination of Penicillin and Malaria. A. C. Curtis, S. F. Horne and Dorothy H. Norton.—p. 546.
Spinal Fluid and Blood Complement Fixation Reversal in Neurosyphilis. Y. T. Wong and H. Packer.—p. 565.
Syphilitic Primary Optic Atrophy as Cause of Blindness; Importance of Early Diagnosis. J. V. Klauder, G. P. Meyer and B. A. Gross.—p. 574.
Acute Syphilitic Meningitis: Report of 80 Cases. O. A. Pardo and T. W. Farmer.—p. 587.
Vagotomy in Treatment of Gastric Crises of Tabes Dorsalis. C. W. Stoops Jr., L. S. Markson, J. M. Sullivan and J. Kanter.—p. 599.

Treatment of Late Symptomatic Neurosyphilis.—Kopp and his co-workers treated 394 patients with neurosyphilis with penicillin at the Boston Psychopathic Hospital from February 1944 to March 1948. Three hundred and five of the patients had dementia paralytica. Penicillin alone in 3,000,000 or 6,000,000 unit dosages over a period of five to fifteen days was administered to 94 patients, and penicillin combined with fever to 300 patients. Fever treatment was given in amounts equivalent to one half of the usually accepted course. Thirty-two patients died, but in only 16 (4 per cent) can death be attributed to the syphilitic process. Twenty-four patients (6 per cent) have been lost to clinical follow-up. Of 274 living patients followed one year or more, 170 (62 per cent) have improved. The clinical syndrome is of considerable importance in the therapeutic results obtained. Of 59 nonpsychotic paretic patients 50 (85 per cent) have improved. Of 211 psychotic patients 117 (55 per cent) have improved, with improvement ranging from 12 (25 per cent) in 48 patients with schizophrenic-like syndromes to 18 (90 per cent) in 20 patients with manic-depressive types. These factors must be taken into consideration when comparing the result of treatment from different clinic groups. Penicillin administered over a fifteen day period and combined with fever therapy gave better clinical results than when given for ten days or less. Clinical improvement resulted in 37 (71 per cent) of 52 patients in the former category

and in 46 (58 per cent) of 79 patients in the latter. No significant difference was observed when 3,000,000 or 6,000,000 units of penicillin was used. Retreatment was more frequent when penicillin alone was used, 28 (52 per cent) of 54 patients, in contrast to 45 (21 per cent) of 219 patients to whom combined fever and penicillin was given. Retreatment was more frequent when 3,000,000 units of penicillin was used with or without fever. A short course of malaria therapy when added to penicillin given over a fifteen day period is equal to or superior to any treatment thus far known in late symptomatic neurosyphilis.

Results in Neurosyphilis Treated with Penicillin Alone.—The report by Stokes and his co-workers is the fifth in a series presented by the University of Pennsylvania on the treatment of neurosyphilis with penicillin alone. In some of the total of 537 cases the fourth year has now been reached, and longer. The results of the serial examinations of spinal fluids and parallel clinical data sustain the record of the third year in this series and show a recognizable increase in the proportion of normal, near normal and markedly improved spinal fluids obtained over previous reports. Forty-six per cent of paretic, 60 per cent of taboparetic and 80 per cent of tabetic patients with type III spinal fluids now have normal or near normal spinal fluids. Sixty per cent of patients with meningovascular syphilis and 74 per cent of those with asymptomatic neurosyphilis have a similar status. Like the results presented in 1946, though to an even greater degree, these figures suggest that penicillin is superior to other forms of treatment for all types of neurosyphilis and certainly entitled, on the scores of safety, convenience and effectiveness, to first choice.

Treatment of Neurosyphilis with Penicillin Alone and with Malaria.—From a total of 539 patients with neurosyphilis who have been treated with penicillin alone or with penicillin and malaria, 223 were followed by Curtis and his co-workers for one year and 104 of these for two years after treatment. Patients with asymptomatic neurosyphilis, meningovascular syphilis and tabes dorsalis respond as well to a regimen of penicillin alone as to one of penicillin and malaria. This response was apparent in both the clinical evaluation and spinal fluid improvement of these patients. Patients with paresis and taboparesis responded as well in the clinical evaluation of their symptoms to penicillin alone as they did to a combination of penicillin and malaria. The latter regimen retains a slight superiority after two years of observation, if the improvement of the spinal fluid is used as the sole index of comparison. A longer period of post-treatment observation seems indicated before any final conclusion can be drawn regarding the efficacy of penicillin alone in the treatment of this group. The response of patients with the several types of neurosyphilis seems to be more rapid when the combination of penicillin and malaria is used. Even in taboparesis and paresis, there are indications that penicillin therapy alone will eventually prove as effective as its combination with malaria therapy. Treatment with penicillin alone is far less hazardous.

Archives of Ophthalmology, Chicago

39:451-562 (April) 1948

American Ophthalmology During the Past Century. F. H. Verhoeff. —p. 451.
*Atrophy of Optic Nerve Due to Malnutrition: Report of 2 Cases. R. Eissler.—p. 465.
Studies in Experimental Ocular Tuberculosis: X. Effect of "Promin" and "Promizole" on Experimental Ocular Tuberculosis in Immune-Allergic Rabbit. A. C. Woods and E. L. Burky.—p. 471.
Dacryocystitis of Infancy: Review of One Hundred Cases. J. V. Cassady.—p. 491.
Spectral Transmission of Eye to Ultraviolet Radiation. V. E. Kinsey. —p. 508.
Real Significance of Centering a Contact Lens. J. I. Pascal.—p. 514.
Syndrome of Unilateral Recurrent Attacks of Glaucoma with Cyclitic Symptoms. A. Posner and A. Schlossman.—p. 517.
Congenital Grouped Pigmentation of Retina: Report of 2 Cases. P. Tower.—p. 536.
Crescentic Deformities of Lid Margin. S. A. Fox.—p. 542.
Cotton Sutures in Ophthalmic Surgery. J. W. Henderson.—p. 545.

Atrophy of Optic Nerve Due to Malnutrition.—Eissler presents the histories of 2 patients who had atrophy of the optic nerve probably as the result of severe malnutrition while they were prisoners of war for several years during the war in the Philippines. Detailed histories show that the visual difficulties were concurrent with other symptoms of vitamin deficiency and that the visual disturbances improved with an improvement in the diet. No attempt is made to determine lack of which vitamin may have caused the atrophy of the optic nerve or to determine whether the atrophy of the optic nerve was due to a primary disturbance in the ganglion cells of the retina, to optic neuritis or to retrobulbar neuritis. The author reviews the literature on the relation between vitamin deficiencies and optic nerve atrophy and suggests that this complication of malnutrition may be commoner now than the literature has indicated in the past. This greater frequency may be incident to the severe malnutrition to which some American prisoners of war were subjected.

Archives of Pediatrics, New York

65:527-590 (Oct.) 1948

Immunization Against Scarlet Fever. M. S. Cioffari.—p. 527.
*Radiation Therapy of Tonsils and Adenoids. E. M. Uhlmann, P. Rosenblum and S. J. Perlman.—p. 532.
Some Aspects of Right Upper Lobe Pneumonia in Children. A. I. Suchett-Kaye.—p. 546.
Turner's Syndrome in Male: Report of Case Showing Defects Such as Short Stature, Sexual Underdevelopment, Webbed Neck and Various Other Congenital Defects Without any Increased Urinary Pituitary Gonadotropins. G. B. Dorff, D. H. Appelman and A. Liveson.—p. 555.

Radiation Therapy of Tonsils and Adenoids.—Uhlmann and his associates believe that if temporary or permanent contraindications exist to tonsillectomy, such patients can often be treated by the application of radiation therapy. During the last ten years more than 1,500 patients received roentgen therapy for recurrent colds, throat infections, cervical lymphadenopathy, impaired hearing and other symptoms associated with an enlargement of the tonsils, or with the existence of hypertrophic lymphoid tissue in the pharynx, in the Tumor Clinic of Michael Reese Hospital. In order to evaluate the results obtained in these patients the authors have checked on 600 patients treated between 1938 and 1942. Of these 480 could be traced and examined. The average dose used was 125 r to each field in each treatment, both fields being treated the same day. The treatment was repeated twice in weekly intervals so that the total amount of radiation was given within two weeks, with a total of between 450 to 900 r, measured on the skin to two fields. This amount of radiation is a relatively small dose and well below the skin erythema dose. Reviewing the results obtained, the authors say that 25 per cent of all patients had a complete cessation of the symptoms for which they were treated, and 45 per cent had so much improvement that they were considered well. Almost one fifth of these two groups, who represent 70 per cent of the total number, underwent tonsillectomy without appreciable benefit before they were referred for radiation therapy. Of all patients in this study 16.6 per cent showed only temporary improvement, but in many instances this proved to be valuable, since the patients remained clinically well. In other instances, tonsillectomies which could not be carried out before radiation therapy now became feasible and improved the patient's condition. In 13.3 per cent radiation therapy proved to be a complete failure, but many of these patients offered poor prospects for any form of therapy since they include patients suffering from a status allergicus with hay fever, asthma, skin diseases and other symptoms; more than 50 per cent of them never were considered for surgery. In instances in which all the anatomic structures of the tonsils are hypertrophic, as is frequently the case in children, radiation therapy can be expected to be successful. If repeated infections of Waldeyer's ring with sore throats and cervical lymphadenopathy are present, radiation therapy is indicated and in most instances preferable to surgery.

Arizona Medicine, Phoenix

5:1-112 (Nov.) 1948

Newer Aspects of Sterility. M. J. Whitelaw.—p. 25.
Rheumatoid Arthritis. S. K. Conner.—p. 33
Massive Hemorrhage from Meckel's Diverticulum Occurring in Infant of Three Months B. P. Storts Jr. and J. B. Littlefield.—p. 41.
Reaction Following Use of Tr. Merthiolate. H. D. Cogswell and A. Shoun.—p. 42.
Urologic Manifestations of Endometriosis with Report of 2 Cases. W. G. Shultz and E. C. Graf.—p. 44
Fibrocystic Disease of Pancreas. H. W. Kohl.—p. 47.
"Despotism by Consent of the Governed." J. H. Howard.—p. 54.

Canadian Journal Public Health, Toronto

39:391-432 (Oct.) 1948. **Partial Index**

Outbreak of Paratyphoid Fever in Edmonton, Alta. G. M. Little. —p. 391.
Nutritional Aspects of Hartman Jones Memorial School Health Study: II. Report After Two Years. E. M. Shaver, E. M. Esler, W. Mosley and E. W. McHenry.—p. 395.
Standardization of Serodiagnostic Tests for Syphilis in Provincial Public Health Laboratories. R. H. Allen.—p. 401.
*Hospital Crowding and Insurance: Survey of Western Ontario. H. M. Ballantyne, J. M. Harrington and J. S. McKim.—p. 409.

Hospital Crowding and Insurance.—Ballantyne and his associates studied the relationship between hospitalization insurance and present hospital crowding. It was found that the utilization of hospital facilities by insured groups is essentially the same as the general average for the population, although the insurance subscribers are recruited from the section of the population with low morbidity rates. Between 30 and 40 per cent of patients in public general hospitals are 60 years of age or older and few of this group are covered by insurance. On the basis of representative figures on utilization of hospital facilities of the insured group as compared with the average and the difference in the age composition of the two groups, it seems justifiable to conclude that the use of insurance as a means of paying hospital bills does increase the utilization of service beyond that expected of uninsured persons. This finding should hardly be unexpected, as it is one of the purposes of the insurance principle to allow people to go to hospital who might not otherwise be able to defray the expense of this form of treatment.

Diseases of Chest, Chicago

14:795-950 (Nov.-Dec.) 1948

Facts and Fancies in Management of Seriously Ill Patient with Bronchial Asthma. M. S. Segal.—p. 795.
*Clinical Significance of Pulmonary Hemorrhage: Study of 1316 Patients with Chest Disease. O. A. Abbott.—p. 824.
*Streptomycin in Tuberculous Meningitis: Report of Case. R. B. Bauer and E. P. Sauer.—p. 843.
Combination Promin and Streptomycin Therapy for Tuberculosis. H. V. Madsen.—p. 850.
Solving Problems of Tuberculous War Veteran. A. Shamaskin.—p. 853.
Tuberculosis Case-Finding Survey in Penal and Correctional Institutions in Ohio. M. W. Garry.—p. 862.
Value of Electrocardiography. J. F. Briggs.—p. 870.
Asbestosis: VI. Analysis of Forty Necropsied Cases. K. M. Lynch and W. M. Cannon.—p. 874.
Velocity of Ether Absorption from Visceral Pleura: Pleura-to-Tongue Circulation Time. R. Charr.—p. 890.
Parasitic Infections of Lung. T. T. Mackie.—p. 894.
Utilization of Collapse Therapy: Report of Sub-Committee on Non-Surgical Collapse Therapy. H. G. Trimble.—p. 906.

Pulmonary Hemorrhage.—Abbott reports 1,316 patients, 724 men and 592 women between the ages of 7 and 87 years, with thoracic disease, 497 of whom had suffered pulmonary hemorrhage, with frank hemoptysis in 318, scant or streaking in 174 and with bleeding of undetermined degree in 5. Cough as a primary symptom occurred in 62 per cent of the cases, while hemoptysis was noted only in 21 per cent. Hemoptysis predicates serious underlying disease in 90 per cent of the patients presenting it and demands immediate and intensive investigation. Percentage incidence of bleeding in individual diseases was observed as follows: Bronchogenic carcinoma leads with 53.60 per cent, while lung abscess has 49 per cent, pulmonary infarct 44 per cent, bronchiectasis 45 per cent and tuberculosis 36.5 per cent. The relatively higher incidence in bronchogenic carcinoma, bronchiectasis and lung abscess than in pulmonary tuberculosis is stressed. The occurrence of bleeding with mediastinal lesions and tumors metastatic to the lung is emphasized. Attention is called to the importance of any variation from the usual type of hemoptysis seen in "acute pneumonia" and the need for investigation to rule out possible underlying neoplasm. No correlation can be made between the type of hemoptysis and the underlying disease, other than a tendency to more copious hemorrhage in patients with pulmonary abscess. The importance of the patient's subjective localization of the bleeding site is stressed. With the addition of staining methods for the study of tumor cells in the sputum and the intelligent use of exploratory thoracotomy, a decrease in the group of hemoptysis of undetermined causation is to be expected.

Streptomycin in Tuberculous Meningitis.—Bauer and Sauer report a man, aged 34, with tuberculosis of the right lung and proved tuberculous meningitis. Pronounced clinical improvement resulted from initial treatment with streptomycin. When the drug was discontinued for five days in the third month of treatment, the patient suffered a severe relapse. Renewal of treatment with streptomycin barely staved off a fatal termination, but after four additional months of treatment the patient progressed to a point where it was deemed feasible to discontinue the drug. He received about 160 Gm. of streptomycin in seven and one-half months by the intramuscular and intrathecal routes. His course after discontinuation of the treatment was marred by one relatively short, self-limited episode of ascites and an attack of acute appendicitis for which an appendectomy was performed. Symptomatic treatment played a large part in combating the disease. Headache and haziness of vision persisted for several months after streptomycin was discontinued but eventually disappeared completely. Ataxia and high tone deafness still persist. The patient seems to be adequately compensating for his vestibular dysfunction. All during his illness and up to the present time he has been receiving pneumothorax refills. The chest lesion shows no change and the sputum is still negative. Twenty-two months have passed since the onset of his disease, the last six of which he has spent at home with no ill effects.

Georgia Medical Association Journal, Atlanta

37:403-438 (Nov.) 1948

Modern Clues in Diagnosis and Treatment of Primary Carcinoma of Lung. W. A. Hopkins and O. A. Abbott.—p. 403.
Testicular Neoplasms. G. J. Bridges.—p. 418.
*Palliative Effect of Androgens in Management of Pelvic Malignancies. R. H. Chaney and R. B. Greenblatt.—p. 420.
Toxic Hyperplasia of Prostate. E. Floyd and J. L. Pittman.—p. 425.
Cancer News. J. C. Norris.—p. 428.
A Century of Progress. E. H. Greene.—p. 429.

Androgens in Pelvic Cancers.—Chaney and Greenblatt treated 5 women between the ages of 43 and 80 years, 3 with primary ovarian carcinoma, 1 with metastatic breast carcinoma to the ovaries and 1 with sarcoma of the uterus, by pellet implantation or intramuscular injection of 650 to 2,200 mg. of testosterone. Treatment with androgens proved of value as a palliative measure in these cases of pelvic cancers. The improvements noted were both physical and psychologic. There was temporary remission of pelvic pain, some decrease in the size of the tumor masses, improvement in well-being, increase in weight (9 to 20 pounds [4.1 to 9.1 Kg.]) and a lessened need for narcotics and sedatives. Physiologic effects, such as cessation of menstruation, hypertrichosis, deepening of the voice, increase in libido, enlargement of the clitoris and atrophic changes in the vaginal smear were usually noted. Benefit lasted from several months to almost one year in these hopeless cases. If testosterone so administered offers surcease from suffering to the patients the trial is worth the effort. The optimum dosage of the drug has not been decided on, but from these preliminary studies it is evident that greater dosage for longer periods may offer much more.

Indiana State Medical Assn. Journal, Indianapolis

41:1141-1228 (Nov.) 1948

President's Address. C. A. Nafe.—p. 1161.
*Clinical Aspects of Gastric Malignancy. G. E. Gates.—p. 1166.
Novocain Injection Treatment of Metatarsal Fractures. C. Otten and E. B. Mumford.—p. 1169.
What Is the Best Treatment for Early Syphilis? A. M. Buchholz. —p. 1170.

Gastric Cancer.—Gates believes that every patient past 35 years of age who has digestive complaints which are in the least suggestive of gastrointestinal disease must be given roentgen examination at once. The average duration of symptoms before these patients visit the doctor is six months. The average time after this first visit before a correct diagnosis is made has been found to be nearly another six months; routine roentgen studies would do away with this. However, even then, the lesions will often have spread beyond the confines of the stomach. The most common complaint is that of vague epigastric discomfort or distress, associated with, or even followed by, disturbances of appetite and slight nausea. If the lesion is

at the pylorus, these symptoms may be early vomiting, and if near the cardia, hiccoughing following eating. Eating generally aggravates the distress, in contrast to the peptic ulcer syndrome, but about 30 per cent of cases show a typical ulcer reaction, with relief by eating. The unwary physician who treats this group by diet and antacids without roentgen studies will lose for these patients their chance of cure. Gastroscopic examination may be of help in doubtful cases, and now there is also cytologic examination of the gastric secretion according to the method of Papanicolaou. The cases in which cancer is apt to be present but which justify two weeks of therapeutic trial and reexamination are those with a large crater, those with irregular contour of the niche and those with a lesion on the lower half of the lesser curvature, especially if on the posterior wall. The ones warranting surgical exploration without therapeutic trial are cases with the meniscus sign, lesions of the greater curvature, subtraction defects associated with an ulcer and the presence of an achlorhydria in any location.

Journal of Aviation Medicine, St. Paul

19:305-396 (Oct.) 1948

*High Altitude Hypoxia: Observations at Autopsy in 75 Cases and Analysis of Causes of Hypoxia. R. B. Lewis and W. Haymaker. —p. 306.
Recovery of Brain from Anoxia After Administration of Analeptic Drugs: Electroencephalographic Studies on Rabbits. W. K. Noell. —p. 337.
Total Lung Volume and Maximal Breathing Capacity (MBC) in Pulmonary Emphysema After Repeated Periods of Intermittent Positive Pressure Breath.ng (IPPB). H. L. Motley, L. P. Lang and B. Gordon.—p. 346.
Influence of Radial Acceleration (Centrifugal Force) on Respiration in Human Beings. C. F. Lombard, H. P. Roth and D. R. Drury. —p. 355.
Turbo-Jet Engine Noise: Vibrational Frequencies and Intensities Encountered in Engine Test Cells. E. S. Mendelson, J. R. Poppen, A. T. Kornfield and H. G. Wagner.—p. 365.
Engineering Materials, Design and Technics of Investigation of Oxygen Equipment. L. W. Meakin, E. L. Hays and J. R. Poppen.—p. 375.
Aviation Noise Deafness, Hearing Standards and Recruitment. W. J. Pothoven and A. Schuringa.—p. 380.
International Quarantine and Air Travel. C. H. Morhouse.—p. 389.
*Possible Effects of Streptomycin Upon Airman's Future. P. A. Campbell.—p. 393.

High Altitude Hypoxia.—From the large collection of cases in the files of the Army Institute of Pathology in which death occurred at high altitudes, Lewis and Haymaker selected those due to hypoxia. These numbered 75. The subjects were members of heavy bomber aircrews whose ages varied from 19 to 33 years. All were apparently in excellent health before the hypoxic episodes. The information regarding the oxygen check interval and the time the men were without supplemental oxygen was obtained from the surviving crew members. Altitudes at which death occurred are known in 70 cases. Flights at altitudes between 17,000 and 30,000 feet (5,180 and 9,140 meters) were in progress when 59 of these deaths occurred and between 30,000 and 31,500 feet (9,600 meters) for the remaining 11. The average altitude was 27,000 feet (8,230 meters). The most common cause of oxygen failure was separation of the quick disconnector between the mask hose and the regulator hose. The second most common cause of oxygen deficit was freezing of moisture in the mask. In 4 instances the oxygen system was shot away by enemy fire. Defective oxygen equipment could be held responsible for the fatal hypoxia in two others. The exact duration of the hypoxia is known in only 6 cases: less than three minutes in 4 and from five to six minutes in 2. The outstanding pathologic changes were (1) engorgement of systemic veins and passive congestion, edema and hemorrhage of the internal organs, (2) vacuolar changes with or without inclusions in cells of internal organs, especially the heart and liver and (3) reactive changes in leptomeningeal histiocytes, extravasation of lymphocytes into perivascular spaces of the brain and acute ganglion cell changes in the brain.

Streptomycin and an Airman's Future.—Campbell is concerned with the vestibular disturbances resulting from the prolonged administration of streptomycin. He makes the plea that streptomycin be used in flying personnel only after due consideration has been given to the possible effect such administration may have on the airman's future. If it is possible to substitute some other drug or biologic product, it should be done. If an airman has had streptomycin he should have a careful evaluation of his vestibular system before he is allowed to resume his occupation.

Journal Pharmacology & Exper. Therap., Baltimore

94:215-338 (Nov.) 1948. **Partial Index**

Effect of Adrenergic Blocking Agents on Vasoconstriction Produced by Acute Oxygen Lack. D. F. Marsh and E. J. Van Liere.—p. 221.
Antibiotic Lactones and Synthetic Analogs: I. Cardiotoxic Effects on Isolated Frog Heart. N. J. Giarman.—p. 232.
Neurological Syndrome Induced by Administration of Some Chlorinated Tertiary Amines. A. Goldin, H. A. Noe, B. H. Landing and others. —p. 249.
Effect of Cardiac Glycosides on Respiration of Cardiac Muscle. M. Finkelstein and O. Bodansky.—p. 274.
Studies on Laxative Activity of Triphenylmethane Derivatives: I. Relationship Between Structure and Activity of Phenolphthalein Congeners. S. Loewe.—p. 288.
Comparison of Nine Local Anesthetics. H. S. Hamilton, B. A. Westfall and J. K. W. Ferguson.—p. 299.
Biologic Assay of Thyroid Activity. D. E. Hutcheon.—p. 308.

Journal of Venereal Disease Information, Wash., D. C.

29:359-404 (Dec.) 1948

Macroflocculation Spinal Fluid Test Employing Cardiolipin-Lecithin Antigen. A. A. Rosenberg, A. Harris and Virginia L. Harding. p. 359.
*Juvenile Delinquency and Venereal Disease Among Public School Children in Philadelphia. N. R. Ingraham Jr. and M. J. Burke. —p. 362.
Contact Reporting by Merchant Seamen. Rosalie Giacomo and J. W. Rion.—p. 371.

Juvenile Delinquency and Venereal Disease.—Ingraham and Burke state that in Philadelphia one fifth of the syphilis and gonorrhea cases detected occur in children under 20 years of age. Of the 5,839 cases discovered in public school children in Philadelphia between 1945 and 1947, ages 13 through 15 accounted for 10 per cent of the cases. In ages 16 through 19, the frequency of detection increased with age, the years 18 and 19 accounting for more than half of the total cases. Syphilis and gonorrhea are reported with almost equal frequency in school age children. Venereal disease is reported somewhat more often among young girls than among young boys. In the senior high school age group, those who remain in school have only about one half of the venereal disease rate of the age group as a whole, and there is a greater expectancy of venereal disease among children retarded in school. The rate of occurrence of venereal disease in the delinquent group (through 17 years of age) is four times greater than the reported rate in the upper three years of high school. Teaching children sex hygiene is insufficient to prevent exposure. Problems associated with venereal disease and juvenile delinquency are individual ones which would be difficult to solve by any mass approach. In addition to what may be done by parents and by the church, the trained school counselor should be made available to help with this problem.

Kansas Medical Society Journal, Topeka

49:449-500 (Nov.) 1948

The Nervous Patient. H. M. Winans.—p. 449.
Report on 116 Cases of Intervertebral Disks. C. Hombold, H. O. Anderson and H. O. Marsh.—p. 453.
*Surgical Repair of Irradiation Defects. D. W. Robinson.—p. 456.
Prevention and Treatment of Deafness in Children. E. La Monte Gann and LaVerne B. Spake.—p. 462.

Surgical Repair of Irradiation Defects.—Robinson points out that, since the beginning of treatment by roentgen-ray and radium, injuries have been known to result from such therapy. Unpreventable sequelae of heroic treatment have been justifiable; however, injuries do result from overenthusiasm, ignorance and negligence. Persons with relatively benign skin lesions have been given a few roentgens in successive treatments over many weeks or months only to have years later the inevitable skin lesions of radiodermatitis which are immeasurably worse than the original condition. The treatment of these lesions should be surgical. He presents 4 cases to illustrate the different methods of repair employed for (1) accidental irradiation burns of physicians, (2) injury from intentional massive dosage for neoplasm, (3) late change from repeated small dosage given for superficial therapy and (4) burns to

patients from prolonged exposure under the fluoroscope. The surgical technics for different structures and different locations are discussed, and special warnings are emphasized concerning the frequency of malignant change and of the difficulty of controlling infections in irradiated tissues.

Michigan State Medical Society Journal, Lansing

47:1161-1304 (Nov.) 1948

President's Address. P. L. Ledwidge.—p. 1209.
Early Contributions of Physicians Toward Tuberculosis Control in Michigan. A. W. Kovacs.—p. 1212.
Aims and Obectives of Research in Tuberculosis. E. R. Long.—p. 1219.
Results of Co-Operative Study on Effects of Streptomycin. J. B. Barnwell.—p. 1220.
Use of Streptomycin in Tuberculosis. K. H. Pfuetze, B. L. Freedlander, S. S. Cohen and others.—p. 1221.
Clinical Evaluation of Functional Studies of Liver. B. C. Lockwood. —p. 1223.
*Argyrosis Following Prolonged Intranasal Medication with Argyrol. R. L. Fisher and M. Zukerman.—p. 1229.
External Duodenal Fistula. A. Large and G. L. Walker.—p. 1231.
The Rh Factor: Case History and Evaluation by General Practitioner. E. A. Bicknell.—p. 1234.
Concurrent Obstructive Jaundice and Familial Hemolytic Icterus: Report of Case Requiring Priority Surgical Treatment for Obstruction. P. A. Dressel and H. M. Bishop.—p. 1237.
Pickrell's Solution in Management of Skin Excoriations Associated with Entero-Abdominal Fistula. R. A. Stiefel and G. T. Kelleher.—p. 1240.
Foreign Agricultural Labor Program in Michigan. O. D. Stryker and C. B. Hoff.—p. 1241.
*Acne Pits: A Supposed Hopeless Disfigurement. W. G. McEvitt. —p. 1243.
Paget's Disease in Three Male Siblings: Clinical Report. L. A. Schwartz.—p. 1244.

Argyria Following Prolonged Intranasal Medication with Mild Silver Protein.—Reviewing the literature on generalized argyria, Fisher and Zukerman discuss the history, clinical data, methods of acquiring the skin condition, differential diagnosis and treatment. They also present Stillians' list of the causes of argyria in industry and in therapy. The case they report concerns a woman, aged 39, who, when first seen in April 1946, complained of a bluish discoloration of the skin which she had noticed for approximately one year. In 1923 she had "bronchial trouble" which persisted for twenty years. When the "bronchial trouble" first began she was advised to use 10 per cent mild silver protein (argyrol®) to clear the secretions from her nose and throat. She continued the use of this medicine intermittently over a fifteen year period. About eight years ago, she was advised by a second physician to continue the use of 10 per cent mild silver protein. She used it daily, morning and night, for approximately two years, requiring about an ounce of the drug every ten days to two weeks. In 1940 she began to use it at occasional intervals, and since 1943 she had ceased the use of silver salts. She exhibited slate blue appearance of the face, lips, buccal mucosa, chest wall, abdomen and back. The legs and thighs also presented a slate blue color but of less intensity. Biopsy revealed silver granules in the basket cell layer and tunica propria of the sweat glands, in the blood vessel walls and in the corium immediately beneath the epidermis. A lesser number were seen scattered through the corium. There has been an increase in argyria since silver salts have again become popular, through the fact that manufacturers claim that organic preparations of silver do not cause abnormal skin pigmentation. The authors feel that it cannot be emphasized too strongly that large doses of silver salts over a short period of time or repeated small doses for prolonged periods will cause argyria.

Disfigurement by Acne Pits.—McEvitt, not being a dermatologist, does not attempt to treat the active acne. He is concerned with the acne pits, the residuum of the disease. Only when the disease is quiescent can the residual scars be treated by the plastic surgeon. Dekeratinization with some caustic such as trichloracetic acid, although still a valuable procedure in some cases, has come into disrepute because it has been misused by charlatans. In the author's program, abrasion by means of sandpaper is the most important feature. This is carried to the point of profuse capillary bleeding, after which a grease gauze dressing is applied and left in place for seven to ten days. When the dressing is removed, the area is found to be epithelialized. Large pits and sinuses are excised and mounds pared as a preliminary procedure. The anesthesia is local. Abrasion is continued from one affected area to the next until all are treated. Second, and sometimes third, operations are required over a given area. In these multistage cases, two to three months are allowed to elapse between operations on the same area. Extremely recalcitrant scars may require even more stages, but this is unusual. No case has been found to be hopeless; some improvement has always been gained.

Minnesota Medicine, St. Paul

31:1161-1280 (Nov.) 1948

Treatment of Open Wounds of Hand. M. L. Mason.—p. 1185.
Management of Vasomotor Rhinitis. H. M. Carryer and C. F. Lake. —p. 1193.
Choline and Other Lipotropic Factors: Mechanism of Action and Significance in Chronic Liver Disease. R. A. Dolan.—p. 1198.
Unrecognized Fractures in High School Athletes. W. K. Foster and J. C. Wells.—p. 1206.
Tracheotomy: Indications and Technic. R. E. Priest.—p. 1211.
Fundamental and Clinical Aspects of Pulmonary Hypertension. C. Borden.—p. 1216.
*Disturbances of Nails Produced by Base Coats. C. W. Laymon and E. M. Rusten.—p. 1218.

Disturbances of Nails Caused by Base Coats.—Laymon and Rusten point out that physicians are observing a new disorder of the nails produced by base coats, which are applied directly to the nails beneath ordinary nail polish to prevent the latter from chipping and to reduce the frequency of application. Base coats have been on the market for several years, but in 1947 new formulas were introduced. One of the most striking changes produced by base coats is the discoloration, which may vary from magenta to different shades of brown. The nails are much drier than normal; they become brittle, and some present longitudinal striations. Another important feature is the deposition of hyperkeratotic material beneath the nail which leads to varying degrees of onycholysis. Most cases which have been observed by physicians who are not acquainted with this disorder have been diagnosed as psoriasis or onychomycosis. There have undoubtedly been many millions of applications of the newer base coats; yet the reactions have been relatively few. For this reason it seems that the material must not be a primary irritant and that persons who have this type of disturbance must be hypersensitive to some ingredient in the base coat. The positive reactions to patch tests with base coats in persons who present these changes suggest that there is an actual contact dermatitis of the nail bed. The accumulation of hyperkeratotic material beneath the nail causes onycholysis and, in same cases, complete shedding of the nail.

New England Journal of Medicine, Boston

239:729-762 (Nov. 11) 1948

*Relation of Vascular Disease to Hypertensive State. II. Adequacy of Renal Biopsy as Determined from Study of 500 Patients. B. Castleman and R. H. Smithwick.—p. 729.
Double Uterus with Horn Menstruating into the Abdomen. J. B. Vernaglia.—p. 732.
Use of Dibenamine in Pheochromocytoma: Report of Case. H. C. Spear and D. Griswold.—p. 736.
Photographic Museum. J. Fallon and J. Meyers.—p. 740.
Sarcoidosis (Concluded). D. G. Freiman.—p. 743.
Neurofibrosarcoma, with Invasion of Right Innominate Vein and Superior Vena Cava.—p. 749.
Peptic Ulcer of Esophagus; Diaphragmatic Hernia.—p. 752.

Vascular Disease and Hypertension.—In 1943 Castleman and Smithwick reported on renal biopsies from 100 hypertensive patients in the course of splanchnic resections for hypertension. The degree of the vascular disease of these patients was divided into five grades of advancing severity. Twenty-eight of the patients showed no or insignificant vascular disease and an additional 25 only mild changes. It was concluded that in many of these patients the hypertensive state antedated the renal vascular lesions, which, once established, probably aggravated the hypertension. Conclusive evidence that biopsy material provides an adequate basis for conclusions regarding the degree of arteriolar disease in hypertensive patients is presented by the authors as follows: Approximately the same percentage of cases for each biopsy grade was present in a series of 500 hypertensive patients as in the first series of 100 patients. The majority of these 500 patients were between the ages of 30 and 50, but 61 were under 30. In 100 of the 500 patients biopsies were taken from both right and left kidneys and in 95 per cent the degree of vascular disease for all practical purposes was identical on both sides. In this group of 100 double

biopsies 40 patients had minimal or no arteriolar disease on each side. There was good correlation between the biopsy grades and renal function as measured by the phenolsulfonphthalein test in the entire series of 500 patients and in 20 patients when compared with renal plasma flow values. There was fairly good correlation between the biopsy grades and the retinal vessel changes when applied to the lowest and highest grades. Of the 61 patients less than 30 years of age 38 had minimal or no renal vascular disease. Two hundred and twenty-eight (45.6 per cent) of the entire series of 500 patients had minimal or no vascular narrowing. It must be concluded, as in the previous report, that hypertension frequently exists in man without evidence of renal vascular disease or with insufficient evidence to explain the elevated blood pressure. Some other functional factors that are primarily responsible for the hypertensive state and precede the appearance of renal vascular disease must exist in many cases.

239:763-800 (Nov. 18) 1948

Medical Aspects of Atomic Energy. S. Warren.—p. 763.
*Clinical Characteristics of Early Diabetes Mellitus. S. B. Beaser.—p. 765.
Fatal Toxic Nephrosis Following Administration of Mercurial Diuretics. M. S. Bruno.—p. 769.
*Physical Risks of Electroconvulsive Therapy. R. Kaldeck, W. F. McLaughlin, J. Gurri and J. I. Wassersug.—p. 773.
X-Ray Diagnosis of Pulmonary Lesions. L. L. Robbins.—p. 779.
Metastatic Fibrosarcoma of Liver and Lungs.—p. 787.
Cyst of Kidney; Papillary Carcinoma of Bladder.—p. 790.

Diabetes Mellitus.—According to Beaser, true onset must be sharply separated from the clinical onset of diabetes. Only 34 per cent of a group of 182 adult patients with diabetes had classic diabetic symptoms as presenting complaints at the time of diagnosis. Diabetic symptoms of any type could be elicited from only 77 per cent of all the patients under consideration. Diabetic complications were shown to be in a different category from the symptoms and were the presenting complaints of only 19 per cent. There was a lower incidence of severe diabetic symptoms with increasing age. Severity, as measured by insulin requirement, seemed to be correlated with untreated prior glycosuria, metabolic decompensation and age, in order of decreasing importance. Single negative urinalyses are of practically no value for the exclusion of diabetes mellitus. Isolated asymptomatic glycosuria, regardless of a negative reaction to a fasting blood sugar test, should be considered diabetic unless a glucose tolerance test proves the contrary. In 56 of 100 patients of the author's group who were found to have had one or more urinalyses prior to diagnosis, glycosuria had been noted up to sixteen years prior to definite diagnosis. Glycosuria preceded symptoms by two to eleven years. Detection and treatment in the earliest, hyperglycemic or glycosuric stages of the disease is urged to prevent progression of severity of complications.

Electroconvulsive Therapy.—Kaldeck and his co-workers report 628 patients with mental diseases who received 8,082 electroshock treatments at the Boston State Hospital during the period 1942 to 1947. Thirty-one of them were aged over 60 and 5 over 70. All these patients responded well to the treatment, as did a child aged 11. One patient aged 23, with paranoid schizophrenia, died eighteen hours after the eighth treatment in a second series of electroshock treatment. Necropsy revealed acute glomerulonephritis, emphasizing that patients suffering from acute infections should be excluded from electroshock treatment and that every effort should be made to discover intercurrent infections prior to and during a course of electroshock. A thorough physical examination of every patient preceded the electroconvulsive therapy, including roentgenograms of the chest, urinalysis, blood count, blood sugar and nonprotein nitrogen determination, sputum examinations, sedimentation rate and electrocardiogram. Definite contraindications were observed to be rare. About 50 patients had signs of cardiovascular disease. In many of these patients the increased blood pressure went down when agitation subsided as a result of electroshock treatment. In a few other cases the blood pressure went up or up and down in a way that was not always consistent with the patient's emotional state. Eight patients with active and 25 with arrested pulmonary tuberculosis were treated in this series. Shock treatment of mental patients with tuberculosis carries definite risks, but in selected cases it has to be given even if the tuberculosis is active. If there is a history of recent hemorrhage or if the activity is high, shock should be given only when the pulmonary process has been controlled by collapse therapy. Eleven cases of fractures due to electroshock treatment were observed; 2 of them occurred in patients who had bone disease prior to the treatment. All fractures healed without permanent damage. A few patients with disease of the central nervous system were treated without ill effects. In another patient, who had no observed physical abnormalities prior to electroshock treatment, a transient hemiplegia developed after the treatment, most likely on the basis of vascular spasm, causing reversible structural damage to parts of the brain.

New York State Journal of Medicine, New York

48:2431-2542 (Nov. 15) 1948

Sphenopalatine Ganglion Block for Relief of Painful Vascular and Muscular Spasm with Special Reference to Lumbosacral Pain. J. L. Amster.—p. 2475.
Erythema Multiforme. M. J. Costello and J. E. Vandow.—p. 2481.
*Solar Burns of Fundi. C. A. Turtz.—p. 2489.
Newer Aspects of Clinical Electrocardiography. R. Gubner and H. E. Ungerleider.—p. 2491.
Guide to Use of Procaine Penicillin in Hospital Practice. G. H. Stollerman, E. H. Roston and Beatrice Toharsky.—p. 2501.
Elusive Mental Cases: Epileptic Personality. B. Liber.—p. 2506.

Solar Burns of the Fundi.—Turtz observed 5 cases of burns of the retina during the past four years. Three were seen within a few days after exposure to strong sunlight. The other 2 were seen four to six hours after exposure to sun lamps. All 5 complained of pain, photophobia and lacrimation, and all had conjunctival injection to a varying degree several hours after exposure. An early examination with the ophthalmoscope may reveal nothing pathologic, or a pale spot, surrounded by a brownish ring, may be seen at the fovea. Later, there may be pigment deposits and a small gray punctate spot around the fovea, and this may be replaced by a hole. The prognosis should be guarded. Even though improvement may occur, a positive scotoma with permanent impairment in vision usually results. The public should be enlightened as to the dangers of prolonged exposure to sunlight and the careless use of sunlamp treatments without adequate protection to the eyes.

Oklahoma State Medical Assn. Jour., Oklahoma City

41:407-448 (Oct.) 1948

Pain from the Psychiatrist's Point of View. J. R. Ewalt.—p. 409.
Organization of Tumor Clinics in Oklahoma. M. I. Shanholtz.—p. 415.
Warts and Their Treatment. C. L. Brundage.—p. 417.
Comments on Treatment of Ménière's Disease (Endolymphatic Hydrops). C. Gallaher.—p. 421.

Rocky Mountain Medical Journal, Denver

45:905-1072 (Nov.) 1948

Role of General Practitioner in Cancer Detection. A. C. Sudan.—p. 925.
Diagnosis and General Management of Carcinoma of Esophagus. R. H. Sweet.—p. 931.
Mediastinal Tumors. A. Ochsner, P. T. DeCamp, M. E. DeBakey and L. A. Vazquez.—p. 934.
Clinical Application of Some Aspects of Gastric Cancer Problem. M. K. Barrett.—p. 941.
Some Aspects of Gastric Cancer Problem in Relation to Diagnosis, Treatment and Prognosis. M. K. Barrett.—p. 945.
Morphology of Early Cancer. J. W. Budd.—p. 958.
Important Features in Diagnosis and Treatment of Tumors of Kidney, Kidney Pelvis and Ureter. V. J. O'Conor.—p. 960.
Brain Tumors: Diagnosis and Treatment. A. W. Adson and H. J. Svien.—p. 962.
Diagnosis of Bone Sarcoma. C. H. Hatcher.—p. 968.
Isotopes in Neoplastic Disease. J. H. Lawrence.—p. 980.
Present Status of Knowledge Regarding Malignant Disease of Prostate Gland and Tumors of Urinary Bladder. V. J. O'Conor.—p. 984.
Tumors of Spinal Cord: Symptoms, Differential Diagnosis and Treatment. A. W. Adson.—p. 989.
Treatment of Bone Sarcoma. C. H. Hatcher.—p. 999.
Bronchogenic Carcinoma. A. Ochsner, M. DeBakey, C. E. Dunlap and I. M. Richman.—p. 1009.
Cancer of Rectum. F. W. Rankin.—p. 1023.

Southern Surgeon, Atlanta, Ga.

14:735-800 (Nov.) 1948

Complications of Treatment of Fractures of Shaft of Femur. W. G. Stuck and A. A. Grebe.—p. 735.
Dislocated Disk of Lumbar Region: Statistical Analysis of Series of Cases. J. G. Lyerly and V. T. Grizzard.—p. 755.
Pilonidal Sinus Disease with Especial Reference to McCutchen Operation for Complicated Cases. G. H. Ewell.—p. 766.
The Cancer Problem. H. Acuff.—p. 774.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

21:531-582 (Nov.) 1948

Some Tracer and Therapeutic Studies with Artificial Radioactivity. J. H. Lawrence.—p. 531.
Radioactive Iodine as Diagnostic Aid for Intrathoracic Goitre. G. Ansell and J. Rotblat.—p. 552.
Relation of Radiosensitivity and Radiocurability to Histology of Tumor Tissue. A. Glücksmann.—p. 559.
Preliminary Note on Some Biologic Effects of Alpha Radiation on Frog Tadpole. K. Tansley, L. H. Gray and F. G. Spear.—p. 567.
Vertical Fracture of Patella. G. F. Dommisse and M. H. Fainsinger. —p. 571.
*Radiologic Demonstration of Ascaris Infestation. C. Strang and C. K. Warrick.—p. 575.

Roentgenologic Demonstration of Ascaris Infestation.—Strang and Warrick point out that roentgenologic methods are rarely necessary to diagnose the presence of roundworms in the bowel, and the searching for the ascaris ova in the stools is simpler and more reliable. When, however, the presence of worms has been overlooked clinically, and other diagnoses such as peptic ulcer, carcinoma or gallbladder disease are being considered, roentgenograms may show roundworms to be the cause of symptoms. Exceptionally, male worms may be present without females, so it is not justifiable to presume the absence of worms if the examination of the stools for eggs yields a negative result in a suspicious case. The roundworms show as sharply outlined, band-shaped or cylindric defects in the barium shadow of the small intestine. The barium may adhere to the surface of the worm so that its outline is visible. Sometimes a thread-like shadow indicates that barium has entered the enteric canal of the parasite. The presence of worms may lead to irritability and disordered motility of the bowel. The authors present a case which showed all these features.

British Medical Journal, London

2:847-888 (Nov. 13) 1948

Role of Special Diets in Treatment of Female Infecundity. Mary Barton and B. P. Wiesner.—p. 847.
Biologic Aspect in Treatment of the Infertile Marriage. R. C. Brown. —p. 851.
Ringworm of Scalp in Eastern Region of Scotland, 1946-7. J. Kinnear and J. Rogers.—p. 854.
Cirrhosis of Liver Presenting as Severe Anemia: Report of 2 Cases. P. N. Coleman.—p. 858.
*Treatment of Abortus Fever with Sulfonamides and Blood Transfusions. J. MacD. Holmes and R. Hughes.—p. 859.

Sulfonamide Drugs and Blood Transfusions in Undulant Fever.—A report on 4 cases of undulant fever which responded quickly to sulfonamide drugs together with blood transfusions induced Holmes and Hughes to try this treatment in 2 patients both of whom had failed to respond to previous treatment. The first patient had failed to respond to penicillin and the second one to penicillin and sulfamethazine® (2-sulfanilamido-4,6-dimethylpyrimidine) or sulfadiazine. In both of these patients there was rapid response to sulfadiazine and small blood transfusions. The second patient returned three weeks later with acute cholecystitis due to Brucella abortus; the temperature did not subside after cholecystectomy but responded to further sulfadiazine and blood transfusions. The authors feel that these results are encouraging and that this method of treatment should be given a more extended trial.

Edinburgh Medical Journal

55:513-576 (Sept.) 1948

Gastro-Jejunal Ulceration. A. G. R. Lowdon.—p. 533.
Partial Gastrectomy for Peptic Ulcer. H. W. Porter.—p. 549.
*Causalgia: Review of 22 Cases. A. J. Slessor.—p. 563.

Causalgia.—Slessor reports on the late results of sympathectomy for causalgia in a series of 28 patients out of 670 with peripheral nerve injury. Sympathectomy relieves the burning pain of causalgia; in 17 patients so treated there has been no recurrence of this pain two to three years after operation. Subsidiary pains may persist, although diminished in intensity. In some cases repeated procaine block of the appropriate sympathetic chain affords relief. Two patients so treated have remained free of pain for three years. Slight sympathetic activity in the limbs, result of faulty operative technic or of regeneration, has not been associated with recurrence of symptoms. Three untreated persons still have causalgia, which is gradually diminishing, although emotional and environmental stimuli continue to aggravate the pain.

Lancet, London

2:755-796 (Nov. 13) 1948

Period of Transmission in Certain Epidemic Diseases: Observational Method for Its Discovery. R. E. Hope Simpson.—p. 755.
*Rapid Disinfection of Clean Unwashed Skin: Further Experiments. A. D. Gardner.—p. 760.
Potency and "Toxicity" of Some Synthetic Estrogens: Clinical Assessment. P. M. F. Bishop, G. C. Kennedy and G. Wynn-Williams. —p. 764.
Activity of Some Synthetic Estrogens Determined by Experiments on Rats. G. L. M. Harmer and W. A. Broom.—p. 766.
*Rate of Flow of Venous Blood in Legs: Measured with Radioactive Sodium. H. Payling Wright, S. B. Osborn and D. G. Edmonds. —p. 767.
Further Observations on Results of Sympathectomy of Upper Limb. H. Barcroft and G. T. C. Hamilton.—p. 770.
Method of Testing Analgesics. R. Asher.—p. 771.

Disinfection of Clean Unwashed Skin.—Gardner says that rapid disinfection of unwashed skin, experimentally infected with bacteria, has been investigated in a previous inquiry, which showed that 2 per cent iodine in 70 per cent alcohol disinfected more rapidly than any of the other substances tested. The author presents further investigations on this problem which confirmed the power of 2 per cent iodine in 70 per cent alcohol to achieve virtual disinfection of flat areas of unwashed clean skin in 30 seconds or less. It is shown also, that, if a full 30 seconds is allowed, the iodine may be reduced even to 0.5 per cent. The detergents, benzalkonium chloride 30 per cent and cetrimide® (cetyltrimethyl ammonium bromide) 10 per cent, both in 70 per cent ethyl alcohol, give satisfactory disinfection in 30 to 45 seconds. Ethyl ether, various mercury preparations and some other substances have either a slower or an otherwise imperfect disinfecting power.

Flow of Venous Blood Measured with Radioactive Sodium.—According to Wright and his associates venous thrombosis has long been known to be influenced by three main factors, commonly known as Virchow's triad—changes in the constitution of the blood, damage to the blood vessels and disturbances of the circulation. Though the first two of Virchow's three factors are now well established, the participation of the third has hitherto remained largely inferential. The introduction of radioactive tracers has made possible the direct measurement of the rate of blood flow in a limb by introducing such a tracer at one point and determining its arrival at some other point with a suitably placed Geiger-Müller counter. The authors measured the rate of venous blood flow in the leg by means of radioactive sodium (Na^{24}). Studies were made on 121 normal persons most of whom were in the age group from 20 to 30 years. The flow time was measured with the subject in the supine position, care being taken to insure that the foot was at the same level as the heart and that the head was not raised. The subjects were rested for at least twenty minutes under a warm electric blanket so that their foot temperature approximated as nearly as possible that of patients in bed—i. e., 33 C. (91.4 F.). To see whether skin temperature had any pronounced effect on the foot-groin time, 10 persons were examined on two occasions, first in the way just described and again with the foot and leg immersed to the knee for twenty minutes in a water-bath at 45 to 48 C. (113 to 118.4 F.). A prominent vein on the dorsum of the foot was selected for injection with 1 cc. of solution of radioactive sodium chloride ($Na^{24}Cl$). The mean foot-groin flow time under standard conditions was 18 plus or minus 0.9 second. The extreme range of the observations was 4 to 50 seconds. The results obtained in the 10 persons examined in the standard manner and again after vasodilation by immersion in hot water showed no significant change. Significant changes had been observed by other investigators when the skin temperature rose from 20 to 33 C. (68.0 to 91.4 F.). The authors believe that this apparent difference in results might be due to the fact that their lower temperature of 33 C. was already rather "warm" and probably had evoked considerable vasodilatation and that little further change took place when the temperature was raised to 45 C. It is to be assumed that a greater vasodilatation might result when the temperature is raised

from 20 to 33 C., as had been done by the other investigators. The observed range of flow times in the present series of normal persons under standard conditions of rest and temperature has shown a wider variation than was expected by comparison with the recorded figures of other workers. It is suggested the much larger range observed in this study might be due to the sensitivity of the method.

South African Medical Journal, Cape Town

22:633-660 (Oct. 23) 1948. **Partial Index**

*Injuries of Hand: Their Conservative Treatment. T. Schrire.—p. 634.
Electrocardiographic Case Book. III. A. Landau.—p. 645.
Radiologic Case Book. IX: Adenocarcinoma of Bronchus and Aneurysm of Aorta. M. Findlay.—p. 646.

Injuries of Hand.—After citing statistics on the tremendous industrial losses, in the form of man-work-days lost, as the result of injuries to the hand, Schrire discusses the management of these injuries. He cites the following as fundamental principles: 1. The minimum of tissue must be sacrificed; there are no spare parts in a hand. 2. Fibrous tissue strangles function and to prevent its formation infection must be fought at all stages of treatment. 3. Hand skin is the best skin for hands. 4. A loosely sutured skin has the best chance of survival. The technic described is simple and has been tested in almost 2,000 cases. Freeing of hands that are caught in machinery should be done, if possible, by reversing gears and by disassembling parts, to recover everything that has passed in without resorting to needlessly high amputations. The best anesthetic for such a procedure is thiopental sodium, because of its portability and convenience. The author discusses hemostasis, debridement, repair of nerves, joints and tendons, and amputations. After the surgical treatment penicillin should be given for forty-eight hours. The hand is kept elevated for twelve to twenty-four hours to reduce bleeding. After that it is placed in a sling. The plaster and the stitches are removed after twenty-one days. Physical therapy in the form of diathermy and active movements is carried on as long as improvement is taking place. When improvement ceases, the physical therapy is discontinued or altered.

Tubercle, London

29:221-244 (Oct.) 1948

Local Recrudescence as Endogenous Source of Phthisis. A. L. Woolf.—p. 221.
Observations on Atelectasis. A. J. Coello and M. M. Nagley.—p. 231.

29:245-268 (Nov.) 1948

The Time-Table of Tuberculosis. A. Wallgren.—p. 245.
Fluorescence Microscopy and Modified Ziehl-Neelsen Technic. G. O. A. Briggs and M. H. Jennison.—p. 252.
*Calciferol in Treatment of Tuberculous Glands. Suzette Gauvain.—p. 259.

Calciferol for Tuberculous Lymph Nodes.—Gauvain reports 23 children between the ages of 3 and 15 years and 11 adults between the ages of 16 and 44 with tuberculous cervical and inguinal lymph nodes treated with calciferol. The dosage given to most children has been 100,000 units of vitamin D daily, chiefly in dry tablet form by mouth. The adult dose is 150,000 units daily. The total dosage for children varied from 2,000,000 to 16,000,000 units of vitamin D and depended entirely on the child's reaction. The minimum adult dosage has been 7,000,000 units and the maximum 46,000,000 units. The early effect of calciferol is to cause a flare-up of activity, followed generally by rapid healing, which is usually of such a sound degree that the lymph nodes can be immediately and, so far as one can tell at this early stage, safely excised with little risk of recurrence. Of the 14 children with sinuses in this series three were slow to respond, the others all healed soundly and fairly rapidly in periods varying from one to three months. Of the 6 adults with sinuses, 3 healed within three months, 2 within six and 1 in twelve. In 6 of the 7 patients whose lymph nodes have not been excised, the lesions have remained satisfactorily healed; 1 in whom the disease has again become active has been readmitted for excision. The great advantage of calciferol appears to be that it speeds up treatment, quiescence occurs more quickly, and, therefore, surgical treatment may safely take place at an earlier stage. Surgical excision is greatly facilitated by the calciferol, as the lymph nodes are discrete and well calcified. It is as an aid rather than as a replacement of surgical treatment that calciferol appears to have its biggest part.

Acta Endocrinologica, Copenhagen

1:203-298 (No. 3) 1948. **Partial Index**

Carcinoma of Parathyroid with Hyperparathyroidism. B. Fretheim and H. F. Lange.—p. 203.
Demonstration of Substances with Estrogenic Effect in Human Sperm. O. Riisfeldt.—p. 217.
*Significance of Hormonal Disturbances for Development of Mental Diseases (A Review). A. Leth Pedersen.—p. 230.
*Urinary Excretion of 17-Ketosteroids in Women Determined by Zimmermann Reaction. M. Furuhjelm.—p. 238.
Antagonistic Action of Methylthiouracil on Inhibitory Effect of Thyroxin on Serum Lipase. G. Klein.—p. 248.

Hormonal Disturbances and Mental Disease.—Leth Pedersen discusses mental symptoms in association with endocrine lesions. He suggests that certain mental disorders may have an endocrine etiology. He is concerned particularly with women, giving an account of studies concerning patients with lesions in or about the hypothalamus and women castrated by operation. Both groups of patients show symptoms of emotional instability and increased irritability, but these are not identical in the two groups. The patients with hypothalamic lesions show, in addition to emotional instability, decided egocentricity, with a tendency to be hard to please, inert and despairing, whereas women who have undergone castration do not show these tendencies, but are restless and inclined to minimize their symptoms.

Urinary Excretion of 17-Ketosteroids in Women.—Furuhjelm found her modification of the Zimmermann reaction highly satisfactory in the determination of 17-ketosteroids in that it is simple and gives about the same results as do other methods. In studies on a large series of healthy women she has obtained insight into cyclic variations in the excretion of 17-ketosteroids. She also determined the content of 17-ketosteroids in 29 women with more or less pronounced virile traits and in 6 patients with Cushing's syndrome. Discussing observations on fertile women she says that in earlier investigations she had observed a certain tendency toward parallelism between the excretion of estrogenic substances and of 17-ketosteroids in normal women. Unlike the estrogenic excretion, the excretion of 17-ketosteroids showed no regular, pronounced peak in the middle of the cycle, nor did it reach exceptionally low levels during menstruation. The curve representing the normal women seems to show a tendency toward higher levels during the secretory phase. Among women with virilism, the highest 17-ketosteroid levels were found in those with most pronounced virile symptoms; in those with milder symptoms they were within the range of normal variations, irrespective of whether menstruation was normal. Three of the 6 patients with Cushing's syndrome showed an increased 17-ketosteroid level.

Acta Radiologica, Stockholm

30:177-266 (Sept. 30) 1948. **Partial Index**

Direct Demonstration of Perforated Ulcers. J. Frimann-Dahl.—p. 177.
Movement of Mitral Ring in Cases of Pathologic Changes in Left Ventricle Especially within the Posterior Papillary Muscles. H. Odqvist.—p. 182.
Congenital Valvular Formations in Urethra. S. Jorup and S. R. Kjellberg.—p. 197.
Axial Projection of Shoulder Joint. F. Knutsson.—p. 214.
Primary Malignant Tumors in Small Intestine, with Special Reference to Their Roentgen Diagnosis (Survey, and Report of 1 Case). R. Köhler.—p. 217.
*Tomography as Adjunct to Urography. P. T. Andersen.—p. 225.
*Peculiar Late Reaction in Radiologically Treated Cases of Cancer of Hypopharynx (Preliminary Observations). S. Welin.—p. 249.
*Viscous, Water-Soluble Contrast Preparations: Preliminary Report. O. Morales and H. Heiwinkel.—p. 257.

Tomography as Adjunct to Urography.—Andersen says that since July 1947 it has been the practice at the radiologic service of the Central Hospital for Frederiksborg County to use tomography of the kidney region as a supplement to the usual urography, in order to obtain more distinct nephropyelograms free from the disturbing shadows often caused by the presence of feces and gas in the intestinal tract. The author describes the technic and analyses the results obtained in the first 100 cases. He considers tomography particularly helpful in cases in which bowel preparation cannot be undertaken and the amount of gas in the intestine is abnormally increased, and in patients with prostatic hypertrophy, a condition which is often associated with flatulence.

Late Reaction After Irradiation of Hypopharynx.—At periodic follow-up examinations of patients who had been treated by irradiation for cancer of the hypopharynx, Welin observed delayed changes in 5 cases. They consisted in increased width of the prevertebral soft tissue shadow and a renewed occurrence of irregularity of the mucous membrane. These changes, although radiologically indistinguishable from a local recurrence, disappeared without further treatment. All clinical examinations with regard to the presence of a recurrence also remained negative. These changes are presumably caused by a late reaction after irradiation or they may be reaction of the irradiated tissue to an infection.

Water-Soluble Contrast Medium.—After citing some of the disadvantages in the use of iodized oils as contrast mediums, Morales and Heiwinkel say that after several years of trials they have succeeded in developing a water-soluble contrast medium of high viscosity which is free from irritating effects. The contrast substance they use is iodopyracet injection U.S.P. Sodium carboxymethylcellulose (called CMC) is a cellulose ether made by the reaction of monochloracetic acid with alkali cellulose. Its sodium salt is easily soluble in water and, at concentrations as low as 1 to 3 per cent, forms highly viscous solutions which are completely clear and colorless. They do not gelatinize, even on storing, and are completely non-irritant. To avoid pain during injection 0.25 per cent xylocaine hydrochloride® (omega-diethylamino-2,6-dimethylacetanilide hydrochloride) is added as anesthetic. The compound used by the authors contained 35 per cent of iodopyracet, 2.5 of the carboxymethylcellulose and 0.25 per cent of xylocaine.® The proportions of the constituents can be modified to suit the purpose of the examiner.

Arq. da Assist. a Psicopatas do Estado de São Paulo

12:5-292 (Jan.-Dec.) 1948. **Partial Index**

*Pneumoencephalography: A Contribution to Psychiatric Semiology. A. Silveira, C. Pereira da Silva and M. Robortella.—p. 5.

Pneumoencephalography in Psychiatric Diagnosis.—Silveira and collaborators performed pneumoencephalography in 50 unselected hospitalized patients with mental disease. The patients were between the ages of 15 and 70 years. Forty cases are reported in detail. The authors found that pneumoencephalography is of great topographic diagnostic value and is well tolerated. To evaluate adequately its reliability as a localizing test in psychiatry it is important that the psychiatric diagnosis be focused on the localizing meaning of the symptoms, and not on the etiologic or nosologic meanings. Encephalographic alterations suggest neuropsychic symptoms of the "localizing" kind. If the psychiatric pattern of a given patient has a "localizing" feature and consists of symptoms bearing on more than one cerebral region, the encephalogram may follow two different patterns: Either the changes cover the region supposed to be involved or they may also show involvement of distant areas as a secondary effect. Such behavior may be predicted if the localizing pattern is considered in the light of chronologic factors. Such alterations do not mean that all the symptoms must be labeled as originated by lesions: Many may have been evoked at a distance as a functional effect. A normal encephalogram does not contradict a localizing diagnosis by itself. The fact must be borne in mind that the symptoms refer to functions and these may be distorted by dynamic involvement.

Deutsche medizinische Wochenschrift, Stuttgart

73:461-500 (Oct. 15) 1948. **Partial Index**

*Experiences with Penicillin. H. Assmann and H. Moormann.—p. 461.
Problem of Endocarditis lenta; Clinical, Pathologic, Bacteriologic and Therapeutic Contributions. A. Walter, Gertrud Reimold and L. Heilmeyer.—p. 467.
Q(ueensland) Fever in Germany. E. Heni and W. D. Germer.—p. 472.
Chronic Familial Methemoglobinemia and New Modification of Methemoglobin. H. Hörlein and G. Weber.—p. 476.
Defense Against Disease and Antiallergic Principle of Spleen. E. Schliephake.—p. 478.

Experiences with Penicillin.—Assmann and Moormann treated with penicillin 500 patients with bacterial diseases, 30 with disease caused by Streptococcus, 25 by Streptococcus viridans, 56 by Staphylococcus, 32 by Pneumococcus, 5 by Meningococcus and 352 with mixed infections. Three hundred and sixteen patients recovered, 64 were improved and in 120 the treatment was a failure. Administration of the drug by intramuscular route every three hours was preferred. The single doses of the drug varied from 10,000 to 200,000 units and the total doses from 100,000 to 30,000,000 units. The favorable results obtained abroad in diseases caused by Streptococcus and Staphylococcus were confirmed. In contrast to reports published hitherto, a permanent cure of endocarditis lenta, even after treatment with a total dose of 15,000,000 to 30,000,000 units of penicillin, must be considered exceptional, only 1 in 25 patients having recovered. Combined treatment with penicillin and sulfonamide compounds is recommended for meningitis caused by Pneumococcus. Complete cure resulted in 99 of 129 patients with sepsis of various types, in postoperative and post-traumatic infections and in cases of paranephritic abscess. The favorable effect of penicillin on pleural empyema and on empyema of joints and of frontal sinuses, on tuberculous abscesses with mixed infection and occasionally on peritonitis is stressed. In 1 case of agranulocytosis penicillin by intramuscular route and in 2 grave cases of abscess of the lung penicillin spray proved effective and life saving. Penicillin should not be considered a panacea. One should be cautioned against its unlimited use because of the gradually developing resistance to the drug and for economic reasons as well.

Helvetica Medica Acta, Basel

15:323-566 (Nov.) 1948. **Partial Index**

Clinical Manifestations of Neurofibromatosis. E. Martin.—p. 323.
Pathogenesis and Etiology of Temporary Pulmonary Infiltrations with Blood Eosinophilia (Löffler's Syndrome). W. Löffler, A. Essellier and M. M. Macedo.—p. 371.
Diagnosis of Disturbances in Peripheral Circulation. A. Kappert, F. Rupp and P. Rubeli.—p. 404.
Cold Agglutinins and Disturbances in Peripheral Circulation. W. Baumgartner.—p. 411.
Abnormal Electrocardiograms in Athletes. A. Delachaux and J. L. Revier.—p. 424.
Diagnosis and Treatment of Threatening Cardiac Infarct. M. Holzmann.—p. 433.
Folic Acid in Treatment of Macrocytic Anemias. H. Lüdin.—p. 460.
Functional Liver Test with Alcohol. A. Bernestein and H. Staub.—p. 494.
*Addison's Disease in Patients with Diabetes Mellitus. R. Doetsch.—p. 516.
*Experimental Investigations on Treatment of Tuberculosis with Combination of Streptomycin with Para-Amino-Salicylic Acid or with Diamino-Diphenyl-Sulfone-N-Acetate. S. Moeschlin, G. Jaccard and M. Bosshard.—p. 535.

Addison's Disease in Diabetes Mellitus.—Doetsch reports a woman, aged 57, who was treated with insulin and, after Addison's disease had been diagnosed, with desoxycorticosterone. She died after an attack of purulent cholecystitis, which proved refractory to chemotherapy. Necropsy revealed sclerosis of the endocrine glands with severe atrophy of both adrenal glands and atrophy and fibrosis of the pancreas. Observations on the case presented here differ from those reported in the literature. Whereas in this case the diabetes was unfavorably influenced by Addison's disease and was improved after administration of desoxycorticosterone, cases reported earlier have shown the opposite behavior, and experimental studies on pancreatectomized animals and on animals with diabetes due to alloxan have shown a similar behavior, in that adrenalectomy improved the diabetes and administration of desoxycorticosterone intensified it. However, other authors have observed a noticeable increase in sugar tolerance after treating a number of diabetic patients with desoxycorticosterone and deduced from this a synergism of pancreas and adrenal cortex. The reported case seems to support this assumption.

Streptomycin With Para-Aminosalicylic Acid in Tuberculosis.—Moeschlin and his associates describe animal experiments which indicate that in the clinical application, likewise, a combination of streptomycin and para-aminosalicylic acid or of streptomycin and diaminodiphenylsulfone-N-acetate will give better results in the treatment of tuberculosis than the treatment with streptomycin alone. This possibility seems the more probable since it has been demonstrated by experiments in vitro that para-aminosalicylic acid has a strong bacteriostatic effect on human strains of tubercle bacilli, which have developed resis-

tance to streptomycin. This suggests that the two substances have two different points of attack. The evaluation of the efficacy of this combined application in human subjects will require further clinical investigations.

Presse Médicale, Paris

56:825-840 (Nov. 27) 1948

*Can Primary Thrombosis Be Localized at Orifice of Vena Cava? Problem of Thrombectomy for Phlebitis: Thrombosis and Stasis. R. Leriche.—p. 825.
Note on Development of Deficiency in Weight and in Height of Children of School Age Since 1944. Douady, J. Trémolières, Matruchot and G. Pequignot.—p. 826.
Is Hysterical Anesthesia Real Anesthesia? J. Boisseau.—p. 827.

Thrombectomy for Phlebitis.—Leriche reports a case he first considered as one of phlebitis of the left external iliac vein in a man aged 46 who presented edema of the left lower limb and of the lower abdominal wall. The latter edema could be related to thrombosis of the vena cava or to stasis in the epigastric and circumflex iliac veins as a result of thrombosis of the external iliac vein. Incision of the iliac vein revealed stasis but no thrombosis, suggesting that the primary lesion was phlebitis localized at the junction of the iliac vein and the vena cava. The femoral vein appeared to be thrombosed and therefore was exposed and incised. It was filled with clots of jelly-like appearance. These clots did not adhere to the walls of the vessel. Four to 5 cm. of the vein was resected. Microscopic examination of the resected venous segment suggested that the lesions were secondary to a general disturbance of the circulation. The edema of the abdominal wall disappeared and the left leg improved, but ten days after the operation some pain occurred in the right calf and discrete pretibial edema developed. There was mild stasis of the right iliac system. In cases of this type intervention would be more effective if performed directly on the vena cava.

Ztschr. f. Hygiene & Infektionskrankh., Heidelberg

128:1-242 (July 16) 1948. **Partial Index**

Subcutaneous Vaccination Against Smallpox with Standardized Vaccines. M. Kaiser.—p. 1.
Report on Meat Poisoning in a Hospital. G. Petzel.—p. 9.
Experimental Meningococcic Infection of White Mice. W. Goeters. —p. 13.
Biochemistry and Pathogenicity of Hyperacid Pseudodiphtheria Bacilli (Paradiphtheria Bacilli). W. Biechteler.—p. 39.
*Intestinal Protozoa and Their Transmission in North Africa. A. Westphal.—p. 56.
*Epidemiology and Pathogenesis of Amebic Dysentery in North Africa. A. Westphal.—p. 73.
*Combat of Occupational Anthrax by Disinfection with Chloride of Lime Preparations and Formaldehyde Solutions. E. Hailer and K. Heicken. —p. 87.
*Combat of Anthrax by Solutions of Formaldehyde in Industries Processing Hair and Bristles. E. Hailer and K. Heicken.—p. 109.

Intestinal Protozoa and Their Transmission in North Africa.—Westphal says that during the campaign in North Africa the index of infestation with Endamoeba histolytica and other intestinal protozoa was determined in May 1942 by means of stained stool preparations. It was found that those men who had been in North Africa during the summer and fall of 1941 showed a much greater rate of infestation than those who had reached North Africa only in November or later. However, repeated examinations in August and September of 1942 showed that the infestation rates had been equalized. Since the increase in infestation coincided with the season when flies were present in large numbers, the fly must be regarded as the chief transmitter of the intestinal protozoa. This was proved by the fact that in Tobruk 30 per cent of the flies caught near latrines were found to contain in the intestine cysts and protozoa harbored by the human intestine. Prophylactic administration of chiniofon or rivanol® (2-ethoxy-6,9-diaminoacridine lactate) caused intestinal disturbances and did not prevent increase in the rate of infection.

Epidemiology and Pathogenesis of Amebic Dysentery.—Westphal found that of 1,069 men examined during an average stay of 10.4 months in North Africa 64 per cent had had one or several attacks of intestinal disturbances that lasted three or more days. There was no relationship between the index of infestation with Endamoeba histolytica and the incidence of these intestinal upsets. Carriers of E. histolytica did not have more intestinal disturbances than had those who were free from such infestation. That infestation with E. histolytica had no causal significance for the intestinal disturbances was corroborated experimentally by successful infestation with filtrate of feces of a patient with intestinal disturbances who was free from amebic infestation. This indicates that the primary cause of the many intestinal disturbances was bacterial. In 4,057 patients with a clinical diagnosis of dysentery, 96.3 per cent was primarily bacillary on the basis of the clinical aspects and the microscopic examination of the feces and 3.7 per cent was only amebic dysentery at the time of examination. Of the 96.3 per cent in whom the primary cause was bacillary, only 7.6 harbored E. histolytica in their intestinal tract and 1.4 per cent showed symptoms of amebic dysentery in addition to those of bacillary dysentery. The author believes that these and other observations indicate that if E. histolytica is present in the intestinal lumen, amebic dysentery follows after a primary impairment by a bacillary infection. The development of amebic dysentery after bacillary dysentery was observed in several instances in the military hospitals.

Combating Occupational Anthrax.—Hailer and Heicken say that since some patients apparently contracted anthrax indirectly from materials that had become contaminated with anthrax organisms during transport, having been shipped in the same conveyances in which previously anthrax-infected materials had been shipped, it was decided to disinfect railroad cars and other transport facilities in which imported skins and other possible sources of anthrax had been transported. Storage facilities, tanneries, wool carding establishments, horsehair spinning shops and protective clothing of workers in these shops also were to be disinfected. Three potent chloride of lime preparations and formaldehyde in aqueous and soapy solutions seemed suitable for investigation. Since treatment with disinfectants would have to be carried out frequently in the open air and during all seasons of the year, their efficacy under various temperatures had to be investigated. Comparing the sporocidal action of the three chloride preparations, which are of the same potency as regards their active chloride content, it was found that caporit® (a calcium hypochlorite preparation) was the most efficient, the action of the other two preparations being considerably less, particularly at the lower temperature of 12 and 4 C. The disinfecting potency of formaldehyde solutions was considerably less than at 12 C. and even less at 4 C. than it was at 20 C. Soapy solutions of formaldehyde were more effective at the lower temperatures than were the aqueous solutions. Furthermore, solutions that had been prepared twenty-four hours before, whether with or without soap, were more effective than fresh solutions. Pieces of pine boards that had been contaminated with anthrax spores were treated with various disinfecting solutions. The favorable results obtained with solutions of caporit® and formaldehyde indicate that they are of practical value.

Combating of Occupational Anthrax by Formaldehyde Solutions.—Hailer and Heicken describe studies with watery and soapy formaldehyde solutions varying in temperature between 30 and 80 C. They were to be used for the disinfection of hair and bristles, which become damaged when disinfected by boiling or exposure to steam under pressure. It was found that the bactericidal effect of the formaldehyde solutions is greatly enhanced by increased temperature. With the same concentration, a formaldehyde solution is one hundred times as effective at 80 C. as at 20 C. Furthermore, the addition of soap increases the sporocidal effect. When anthrax spores were exposed to formaldehyde solutions for four to six hours the concentration could be reduced about one half for each 10 C. of increase in temperature. Thus at 30 C. the best concentration was 0.25 per cent, at 40 C. 0.15 per cent, at 50 C. 0.075 per cent and at 80 C. less than 0.02 per cent. On the basis of these observations a procedure was developed for the disinfection of animal hairs and bristles which was used with success in establishments that spin horse hair or manufacture brushes.

Book Notices

Technic of Medication. By Austin Smith, M.D., C.M., M.Sc., Director of the Division of Therapy and Research; Secretary, The Council on Pharmacy and Chemistry, The American Medical Association, Chicago. Fabrikoid. Price, $4. Pp. 255, with 6 illustrations. J. B. Lippincott Co., 227-231 S. 6th St., Philadelphia 5, 1948.

This book does just what its title implies. It describes in detail the methods by which medication can be given, including special indications and means of preventing untoward effects. The author has wisely refrained from making the book cumbersome by a discussion of the treatment of individual diseases. Thus there is a considerable amount of useful information not ordinarily found in textbooks of medicine or therapeutics. A short introduction in which the trends in therapeutics and the relationship of drug therapy to other forms of treatment are discussed is followed by a chapter on the prescription. Since prescriptions are now written in English, contain as a rule only one active ingredient, and the dosage is given in the metric system, it is no longer necessary to devote considerable space to Latin endings, incompatibilities or methods of calculating doses. Instead, Dr. Smith has provided a concise discussion of the choice of drugs, the legal implications and the professional relationship of the doctor who prescribes to the pharmacist who fills the prescription and to the nurse who gives the medication to the patient.

Not only are the various methods of giving drugs discussed in detail, but figures, where indicated, help to make every procedure crystal clear.

The many different dosage forms with their special indications are given in a chapter on oral administration. In the section on parenteral administration, not only are the different types of injections carefully explained, but such details as care of needles and methods of loosening the plunger of the syringe when it is stuck in the barrel are given.

Chapters are devoted to the special problems of rectal and genitourinary administration, application to the skin, the eye, nose and throat and ear.

A final section entitled "Practical Aids" gives useful information on care of equipment, removal of stains, storage of medicinals, etc.

This is just the book that the young physician needs to enable him to form good habits in his method of treatment. It is also a useful reference book for the well established physician.

Disorders of Sex and Reproduction: Ætiology, Diagnosis and Treatment. By A. P. Pillay, O.B.E., M.B.B.S. Fabrikoid. Price, 18s. Pp. 299, with 7 illustrations. H. K. Lewis & Co., Ltd., 136 Gower St., London, W.C. 1, 1948.

In an analysis of 159 cases of male sex disorders, excluding sterility, the author states in his introduction that he found 132 cases caused by psychic factors. The book itself is concerned with all aspects of sexuality from anatomy and physiology to endocrinology, psychology and clinical syndromes. All sorts of disorders and syndromes are discussed with the treatment which the practical author states he has found successful among his own patients. The book is written simply and modestly and includes a wealth of clinical material. The psychologic data are somewhat naive and superficial but suited for the general practitioner, for whom the book is intended and for whom it will be rather useful.

Clinical Urology: Essentials of Diagnosis and Treatment. By Lowrain E. McCrea, M.D., F.A.C.S., F.I.C.S., Clinical Professor of Urology, Temple University Medical School, Philadelphia. Second edition. Fabrikoid. Price, $6.50. Pp. 503, with 263 illustrations. F. A. Davis Co., 1914-16 Cherry St., Philadelphia 3, 1948.

The second edition does not vary greatly from the previous edition, except that all the advances which have gained acceptance in urology have been included. New photographs have been added and many illustrations redrawn. The index has been greatly enlarged, which has added to the usefulness of the book. The chapters are well arranged and organized. The type is ideal for easy reading. Because of its conciseness and practicability, the book can be highly recommended to the general practitioner as well as to the medical student.

The Open Self. By Charles Morris. Paper. Pp. 179. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, 1948.

When a distinguished philosopher and serious scholar chooses to write for the lay public on the subject of man and his knowledge of man, which is essentially psychology, we expect a great feast. Without question the author can write simply, pleasingly and understandably, but his content is disappointing. From the first chapter, entitled "Man as His Own Maker," in which the modern world crisis is again outlined and responsibility placed on us (men), to the last page, where a credo of determination includes "we will resume the responsibility for man-making," there is an exhortion for us to rise up and do better. Thus the scholar becomes just another writer for the masses, who love to read how they should decide to be better and do better, and who search for the "how" of so doing. That is why these books year in and year out sell so well, no matter what their contents, for they promise much if the reader would only do better.

The author does, however, manage to convey in readable style much of the present day concepts of psychology intermixed with his predilection for purpose. But the book is pervaded with the notion of the importance of body types in normal and disordered functioning of body and mind. Morris has swallowed the ectomorph, endomorph and mesomorph trinity hook, line and sinker from Sheldon, apparently not even aware of the far older kretchmerian hypothesis which was discarded by medicine and psychiatry as being unfruitful for psychosomatic correlations. As a result the basic concepts which could be of value to the curious reader are distorted for him. He withdraws from exhortation to do better when he is continuously told that he does what he does because of his body structure, fully apparent at birth.

Introduction to Chemistry. By Bertha S. Dodge, A.B., M.S. Fabrikoid. Price, $3.50. Pp. 312, with 40 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1948.

A textbook for student nurses, this highly compressed introduction to inorganic, physical, organic, biologic and pharmaceutical chemistry severely limits itself to topics of most immediate interest to its users: units of measurement; nature of matter and fundamental chemical theory; air, its composition and behavior in the atmosphere and in the body; water, its conversion to a potable liquid and uses as a solvent and chemical properties, including its action as a hydrating and ionizing agent; simple organic compounds; foods, their composition and fate in the body, and vitamins, sulfonamide compounds and antibiotics. The author is to be commended for her careful definitions, which are both scattered through the text and collected, for reference, at the ends of chapters; liberal use of examples and illustrations; clear and thought-provoking questions, and the employment of as simple a vocabulary as is compatible with the subject. However, it seems to the reviewer that the book would have to be supplemented to a much greater extent than a normally discursive text with skilful lectures and numerous laboratory demonstrations.

Language and Language Disturbances: Aphasic Symptom Complexes and Their Significance for Medicine and Theory of Language. By Kurt Goldstein, M.D. Fabrikoid. Price, $8.75. Pp. 374, with 11 illustrations. Grune & Stratton, 381 Fourth Ave., New York 16, 1948.

This book of 374 pages on language is written by a competent neurologist and neuropathologist and is the result of many years of study both in Germany and in America. The author early in his discussion speaks of the difficulties that arise in the real understanding of speech and language. From the ordinary neurologic textbook one gets the idea that the difficulties of speech (aphasia, dysarthria, etc.) are easy to understand as far as localization and mechanisms are concerned. Goldstein shows that such an idea is not true. He attempts to present those speech disturbances observed in lesions of the brain cortex in a form useful both for theoretic and practical purposes in the clinic. There are two parts: One is on the origin of aphasic symptoms and the other is on speech problems, from the clinical and pathologic standpoint. This work is of tremendous clinical value, and as far as the review goes it is one of the best. Few medical men have attempted to discuss speech and aphasic disturbances. Every neurologist and psychiatrist should have this book now. The neurosurgeons will welcome it. It is written

clearly and shows for the first time the relationship between direct lesions of the involved cortex of the brain with other parts of the brain as a whole.

The Drugs You Use. By Austin Smith, M.D., Director, Division of Therapy and Research, and Secretary, Council on Pharmacy and Chemistry, American Medical Association, Chicago. Foreword by Morris Fishbein, M.D. Cloth. Price, $3. Pp. 243. Revere Publishing Co., 15 Trinity Place, New York 6, 1948.

This book offers an authoritative explanation of the many stupid or vicious practices of "the exploiters of human faith in curative remedies." Its flowing style and nontechnical descriptions make it an ideal book for the intelligent layman who may be overwhelmed by the misleading statements and half-truths present in advertisements, the popular press and the radio. It also supplies many needed facts and figures for the busy doctor who must confute exaggerated claims brought to him by his patients. There are chapters on the past, present and future status of medicine as well as on "tonics," vitamins, hormones, vasoconstrictors, local antiseptics, barbiturates, laxatives, thyroid, antiasthmatics, cosmetics, cancer cures and chemotherapy; the dangers of self diagnosis and treatment, the hazards of the common "medicine chest" with its poorly labeled bottles and old prescriptions, the fallacies in scare headlines and rumors of new discoveries and a glossary of the more common scientific terms used in labels, advertisements and the lay press. This book also offers constructive advice for the best use of the usual home medications and in case of emergencies.

Some British Pioneers of Social Medicine. By Major Greenwood, D.Sc., F.R.C.P., F.R.S. University of London. Heath Clark Lectures, 1946, Delivered at the London School of Hygiene and Tropical Medicine. Cloth. Price, $4. Pp. 118. Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London, E. C. 4, 1948.

A study of British pioneers and pioneering in social medicine in England in the late eighteenth, nineteenth and early twentieth century. The material presented relates to applications of medical and scientific knowledge in prevention and relief of suffering and as a means of elevation of the standards of living through social cooperation. Names of many pioneers in early social medicine are given and work credited to them. The body of factual material, however, relates to the personalities and works of Edwin Chadwick, William Farr, John Simon, Florence Nightingale and Frances Galton. The book is historical in nature and is developed from a series of lectures given by the author. Although much of the material presented is of interest to the profession generally, it is of greater value to those interested in the development of medical statistics and historians of medical-social movements.

Frontier Doctor: The Autobiography of a Pioneer on the Frontier of Public Health. By Samuel J. Crumbine, M.D. Cloth. Price, $3. Pp. 284. Dorrance & Co., Inc., 364 Drexel Bldg., 5th and Chestnut Sts., Philadelphia 6, 1948.

Dr. Crumbine presents a variety of personal experiences, incident to the practice of medicine in Dodge City, Kan., in the 1880's and 1890's. Emphasis is also given to experiences in pioneering in public health movements in Kansas during the late 1890's and the early years of the twentieth century. An account of the author's difficulties in initiating and maintaining venereal disease control during the first world war is particularly interesting. Pioneering efforts in obtaining sanitary facilities for the transportation of seafoods from the coast areas to the Midwest are described. Interesting personal opinions on matters relating to the general practice of medicine such as evolution, hypnosis, telepathy and juvenile delinquency are included. Dr. Crumbine's narrative is informative light reading for physicians or for the laity as a record of early accomplishments in public hygiene in Kansas.

Directory of the American College of Hospital Administrators, 1948. Paper. Price, $10. Pp. 331. American College of Hospital Administrators, 22 E. Division St., Chicago 10, 1948.

The 1948 Directory is the fourth in a series of biographic catalogs issued by the American College of Hospital Administrators. It contains alphabetical lists of 325 fellows, 702 members and 330 nominees representing a total college affiliation of 1,357. The biographic information in relation to each administrator includes present position, educational qualifications, previous positions held, memberships in professional organizations and present residence. For convenience of reference there is not only a general index but also a separate alphabetical listing arranged on a regional basis. Lists of officers and regents and members of permanent committees are likewise included. For general information there is a historical sketch of the organization program and a full description of the constitution and by-laws under which the college operates. This volume is a valuable reference and source of information for all who are concerned in the administration and management of hospital services, as well as those who are seeking persons with hospital administrative experience.

Premature Infants: A Manual for Physicians. By Ethel C. Dunham, M.D. U. S. Federal Security Agency, Social Security Administration, Children's Bureau Publication No. 325. Paper. Price, $1.25. Pp. 401, with 31 illustrations. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1948.

This comprehensive monograph with its complete bibliography is written as a source of information and as a guide for the general care of the premature infant.

The content is divided into two parts: Part I covers general considerations including objective measures for prematurity, incidence of premature birth, causes and prevention, deaths of premature infants in the United States and physical growth and prognosis. Part II includes clinical considerations, clinical appraisal, care in the neonatal period, nutrition, congenital malformations, birth injuries, infection, abnormal blood conditions, metabolic disturbances, nutritional disturbances (rickets and tetany) and other conditions (retrolental fibroplasia, noninfectious skin conditions and diarrhea), and miscellaneous material is discussed in the appendixes.

This book could well be added to the library of all physicians and, because of its complete bibliography, should be of special interest to those desiring to keep posted on the subject as a whole.

The Hospital Building: Comprising the 1947 A.I.A. Convention Seminar Addresses on Hospitals, and the Building Type Reference Guide No. 2. Reprinted from the Bulletin of The American Institute of Architects, May 1947 and January 1948. Compiled and edited by Walter A. Taylor, Director, Department of Education and Research, The American Institute of Architects, Washington, D.C. Paper. Price, $2. Pp. 71, with 7 illustrations. Department of Education and Research, The American Institute of Architects, the Octagon, Washington 6, D. C., 1947-1948.

In its 1947 seminar on hospitals the American Institute of Architects discussed such subjects as the past and future developments of hospitals in the United States, administrative aspects of hospital design, development of hospital plans and details of hospital construction, finishes and equipment. Because of continued interest the lectures on these subjects, together with other material and bibliographic references, have been made available in printed form. The present volume, therefore, is a convenient, compact source of reference useful not only to the architectural profession but also to other organizations and individuals interested in hospital planning and construction.

Exploración clínica del aparato o sistema digestivo. Por el Dr. R. Vicuña Herboso, profesor titular de medicina de la Universidad de Chile. Con la colaboración del Dr. Emilio Sáez S., ayudante de la cátedra. Fabrikoid. Pp. 631, with 290 illustrations. Publicado por la Universidad de Chile, Santiago de Chile, 1948.

This is an attractive, well printed and well illustrated volume, which contains much information. It is a textbook on gastroenterology. The book was written by a professor of medicine in the University of Chile. There is much in it that will be of value to the Spanish-speaking student.

Unfortunately, the several sections are of unequal value, some of them being too short to be adequate. For instance, on page 165, only a third of a page is given to flatulence, which is one of the commonest of the symptoms complained of by dyspeptics. On page 164, only a third of a page is given to regurgitation. In this article the author fails to show that he has any knowledge of the symptom. One half of page 163 is on heartburn. There again the author shows no knowledge of his subject. He confuses heartburn with a burning in the epigastrium, which is an entirely different disease.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

THE STATUS OF OSTEOPATHY AS A SPECIFIC METHOD FOR LOW BACK PAIN

***To the Editor:*—An old patient came in and said his low back pain was almost cured by two osteopathic treatments; I had treated him for six weeks with all kinds of treatments. Can these osteopaths and chiropractors do more for most patients with the usual low back pain than can the physician? What does the osteopath have and do for these backs? Can you help me?**

J. J. Blinn, M.D., Long Beach, N. Y.

[The question was referred to four physicians with extensive experience in the study of low back pain. Their replies follow.—Ed.]

ANSWER.—The fact that a physical procedure gives relief of a physical complaint does not necessarily mean that only physical factors are involved in producing the result. There seems to be good reason to believe that states of tension produce discomfort in the back. Tension aches and pains are commonly noted about the eyes and the back of the neck. Many of the physical procedures that relieve such tension pain would seem to include a strong element of suggestion. Sometimes physical procedures may relieve chronic anxiety, which in turn reduces tension and the pain associated with it. Not uncommonly, patients with states of depression who also have low back pain report complete disappearance of discomfort in the back after being subjected to electric shock therapy. Some patients who had been placed in plaster body casts without relief for the back pain have had complete relief after treatment for their psychiatric disorder by shock methods. It seems remarkable that this is the case even though shock treatment may in other instances produce compression fractures of the vertebrae and back pain. The fact that a physical treatment is striking or unusual, or is looked on disapprovingly by medical authorities, may reinforce its psychologic effects.

ANSWER.—Many of my patients with lame backs have been in the hands of osteopaths, some of them for twenty-five years, without cure.

The only thing that the osteopath does is to give manipulations of the spine which suddenly relieve muscle spasm. This does not cure the underlying cause of the lame back. Sometimes injections of procaine hydrochloride or histamine into the muscles will have a dramatic effect on muscle spasm.

I have seen patients with carcinoma of the spine who have been treated by an osteopath with disastrous effects. No worse treatment could be prescribed for this condition.

ANSWER.—Many intangibles enter into the practice of medicine. Manipulations of the back for low backache and for sciatica do occasionally help but it is not true that "the batting average" of the chiropractor and osteopath is any higher than that of the orthopedic surgeon. The orthopedic surgeon may be too conservative about manipulations, particularly in the United States. In England manipulative measures are more commonly employed by surgeons.

Those who have been in orthopedic practice for many years know that manipulations for low backache and sciatica occasionally do help. However, the doctrines taught by osteopaths and chiropractors are unsound.

Many years ago the Amercian Orthopaedic Association had one of its highly respected members at a meeting of the Society in the City of Boston, present either an osteopath or a chiropractor, I cannot remember which, to demonstrate to the members the why and how of his manipulative procedures. The members were not impressed, largely because the anatomic and physiologic knowledge of the manipulator and the interpretation of what was to be attempted were so apparently superficial.

Orthopedic surgeons have all seen suffering and sometimes actual damage done by manipulations by the irregular practitioners.

The comparatively recent outstanding surgical scientific finding that a ruptured and protruded intervertebral disk is a leading cause of low backache and sciatica has perhaps unduly thrown into the background the value of manipulative procedures. Not all backache and sciatica are due to protruded intervertebral disk. I suggest that you consult several books, including one by Mennell (Mennell, J. B.: Physical Treatment by Movement, Manipulation and Massage, ed. 5, Philadelphia, The Blakiston Company, 1945), one by Fisher (Fisher, A. G. T.: Treatment by Manipulation, a Practical Handbook for the Practitioner and Student, ed. 2, London, H. K. Lewis & Co., 1928) and one by Krusen (Krusen, F. H.: Physical Medicine; the Employment of Physical Agents for Diagnosis and Therapy, Philadelphia, W. B. Saunders Company, 1941).

ANSWER.—Careless manipulation can result in death or lasting harm to the patient. An accurate diagnosis is the first requirement before considering manipulation; here the osteopaths and chiropractors frequently get into trouble. Tuberculosis, cancer, fracture, marked osteoporosis or an acute infectious process must be ruled out. This requires adequate roentgenograms and a careful physical examination. Manipulation is often of great value when used together with other orthodox methods of treatment, such as active exercises, physical therapy, traction or immobilization by cast or brace.

The most dramatic results are obtained in those patients who suddenly get a "catch" low in the back, with acute muscle spasm and inability to straighten up. The osteopath calls this a dislocation of the spine. Possibly an incomplete subluxation of the facets may occasionally occur, with the subsequent acute muscle spasm preventing return to normal position. Frequently in this type of patient relief is obtained from a general anesthetic with a minimum of manipulation. The patient with chronic fibrositis may also receive relief in conjunction with proper follow-up care. Many patients do not require general anesthetics for a satisfactory manipulation, though a patient with chronic disability who is apprehensive will do so.

The purpose of the manipulation is to restore length and tone to contracted muscles and ligaments and possibly to break up adhesions in and around the facets. Patients with herniated disk syndromes have frequently been temporarily or permanently relieved by proper manipulation.

Review the roentgenograms before examining a patient. Use a series of manipulations as part of the examination. The manipulation is carried out on a low, firm examining table. The flexed knee is first forced up toward the chest, each knee separately and then together. Then with one thigh hanging off the side of the table locking that side of the pelvis, forcibly flex the opposite hip with the flexed knee, producing torsion on the sacroiliac joints. Patrick's test is forcibly carried out bilaterally. Straight leg raising is carried out with only moderate force. With the patient in the prone position the back is gently hyperextended at several levels by elevation of the thighs with the other hand placed on the patient's back. Lateral manipulation is also possible in this position. With the patient on his side, the upper hip and the knee are flexed, and with one hand on the patient's ilium and the other hand on his shoulder, rotation strains are thrown on the sacroiliac joints and lower part of the spine by force in opposite directions with the hands. A final maneuver is a kick and stretch manipulation of each lower extremity. This is possible only when the patient is awake. The patient flexes the hip and knee with the surgeon grasping the ankle. The patient strongly kicks the leg as the surgeon gives a quick jerk on the ankle. This last manipulation is of particular value when partial subluxation of a joint or a disk syndrome is suspected.

For an excellent discussion of manipulation of the back it is advised that "Backache and Sciatic Neuritis" by Philip Lewin and published by Lea and Febiger be consulted.

FLUORIDES

***To the Editor:*—Is it safe to dispense a fluoride preparation (4 grains of sodium fluoride to 128 ounces [3.8 liters] of isotonic sodium chloride solution) for daily teeth cleansing for children? Is such a solution poisonous if taken internally? This preparation is being prescribed by some dentists.**

Louis M. Harley, M.D., Detroit.

ANSWER.—Topical application of fluorides for the prevention of dental caries still has many unknown factors. Available evidence suggests multiple applications of a 2 per cent aqueous solution of sodium fluoride preceded by oral prophylaxis (*J. Am. Dent. A.*, **34**:700 [May 15] 1947).

Sodium fluoride is a deadly poison, and toxic symptoms have been induced by doses as small as 60 mg. The average fatal dose for mammals is considered to be about 0.5 Gm. per kilogram orally. Possibility of accidental poisoning is always present when such potentially toxic substances are present in the home. Additionally, their presence predisposes to abuse through overuse. Administration of fluorides in any form should be under the direct supervision of a dentist.

DIAGNOSIS OF SYPHILIS

To the Editor:—A married woman, aged 34, had a positive Wassermann reaction on Oct. 6, 1947. One year prior to this she had a negative blood reaction during examination for a food handler's permit. No known primary or secondary manifestations occurred. The Army "twenty-six week" rapid treatment with oxophenarsine hydrochloride and bismuth subsalycilate was given. During the course of treatment a blood test in January 1948 elicited a negative reaction. In May 1948, at the completion of the twenty-six week treatment, the blood reaction was also negative. A positive report was returned on Sept. 20, 1948, during follow-up. After this 600,000 units of procaine penicillin in sesame oil was given daily for ten days. Two weeks later the blood reaction was again positive. Has this patient had adequate treatment? May a second infection be present? What further treatment is needed?

M.D., North Carolina.

ANSWER.—This inquiry raises a whole list of problems in the diagnosis and treatment of syphilis which cannot be covered in a brief answer. Important information is omitted from the inquiry. Does the patient have any physical evidence of syphilis, congenital or acquired? Does her husband have syphilis? Has she any children, and if so, is there any evidence of syphilis in any of them? Was the original positive "Wassermann" rechecked in order to rule out technical error before treatment was instituted? Was the original test quantitatively titered? Since the patient had been known to be seronegative one year before the appearance of the first positive serologic test for syphilis, had she, during the year preceding the discovery of this test, been subjected to any of the extraneous influences known to produce biologic false positive serologic reactions? Has her spinal fluid been examined and, if so, with what result? Were the serologic tests performed after the twenty-six week Army treatment done on a quantitative or a qualitative basis; and what is the quantitative titer now, before, and after the injections of procaine penicillin?

On the basis of the information presented, it is far from certain that the patient has syphilis, either a first or a second infection. In these circumstances it is impossible to offer any opinion as to whether she requires further treatment.

TECHNIC OF FLUORINE APPLICATION

To the Editor:—What is the exact technic of painting a child's teeth with sodium fluoride solution to prevent decay?

Frank W. Dimmitt, M.D., Providence, R. I.

ANSWER.—The coronal surfaces of the teeth are cleaned in the customary manner, i. e., with a motor-driven rubber cup and fine pumice. Only the first topical application in the series of four weekly applications is preceded by dental prophylaxis.

The cleaned teeth are then blocked off with cotton rolls, generally an upper and lower quadrant being treated at one time. The cotton rolls in the lower part of the mouth are held in position by cotton roll holders. In both the upper and lower arch care should be taken to see that the cotton rolls are clear of the teeth so as to avoid absorption by the cotton rolls of the applied solution.

After isolation with cotton rolls, the teeth are dried with compressed air, particular attention being given to drying the interproximal tooth surfaces. A 2 per cent solution of sodium fluoride (chemically pure sodium fluoride in distilled water) is then applied to the dried enamel surfaces of the teeth by means of either a cotton applicator or a light spray. All surfaces, including the interproximal areas, should be wetted and the applied solution allowed to dry in air for three minutes. The second, third and fourth applications are made at weekly intervals. It has been suggested that the series of four applications be given at 3, 7, 10 and 13 years of age so as to protect the deciduous teeth and the various permanent teeth which erupt between the sixth and twelfth years of life.

IVY POISON TRANSMISSION

To the Editor:—As the years have passed, each generation has had its own ideas regarding poison ivy. One group insists that close proximity to the plant is sufficient to cause a serious involvement of the skin. Other groups believe that actual contact is necessary before skin lesions will occur. What are the pertinent facts in this matter?

M.D., Indiana.

ANSWER.—Poison ivy dermatitis results when the irritating substance from the plant comes in contact with a susceptible skin. The contact, however, does not of necessity have to be a direct or obvious one. Shelmire has often noted ivy dermatitis which has resulted from contact with contaminated intermediary objects such as luggage, hunting or fishing equipment, shoes and golf clubs and even from the fur of dogs that had run through an ivy patch. Andrews stated that "some persons are so susceptible that direct contact is not necessary, the poison being apparently carried a short distance by the wind."

DERMATITIS FROM SHIRT FINISH

To the Editor:—A white man aged 40 suddenly had urticarial eruptions on the trunk which gradually spread to the face. This occurred every time that the patient wore a brand new white dress shirt. After the shirt had been washed five to ten times at the laundry he would be able to wear it without any eruption. Is there any substance in brand new white shirts that can be responsible for such a skin eruption?

M.D., New York.

ANSWER.—Most new fabrics from which wearing apparel is made have a finish on them to give the fabric certain desired properties such as better appearance, better wearing qualities and prevention of runs. In your patient's white shirt, the finish was probably one that gave the fabric a better appearance. Such finishes usually contain a synthetic resin, and sensitivity to synthetic resins is not uncommon. An outbreak of dermatitis from wearing apparel, reported in 1940, was found to be due to a synthetic resin finish. Such finishes require many launderings for complete removal. The colored shirts worn by your patient may have had another type of finish. The dress shirt material may require a stiffening finish which is not required by the colored shirts. Directions for determining the exact cause of dermatitis from wearing apparel are to be found in "Occupational Diseases of the Skin," by Schwartz and Tulipan, page 304. (Schwartz, L.; Tulipan, L., and Peck, S. M.: Occupational Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1947, p. 304.)

ACTIVITY OF VIRUS IN SERUM HEPATITIS

To the Editor:—During service I incurred a mild form of homologous serum jaundice following administration of yellow fever vaccine. Jaundice was not sufficient to require hospitalization. Since then I have not had symptoms referable to the jaundice. Is the virus still active at this time? What laboratory tests can be used in this investigation?

M.D., Louisiana.

ANSWER.—Clinical or practical laboratory tests for the detection of the virus of homologus serum jaundice are not known. Various hepatic function tests have been used serially in some groups of patients who have had an abnormal convalescence from infectious hepatitis or serum hepatitis (homologus serum jaundice). Such tests include: the determination of sulfobromophthalein sodium retention, the plasma bilirubin level and the thymol turbidity reaction of the serum. Unless such tests reveal persistent and appreciable abnormalities it would be difficult to interpret them in an asymptomatic patient.

REFLEX SNEEZING FROM LIGHT

To the Editor:—Can looking at bright lights cause sneezing in some persons? What is the mechanism of action and methods of treatment? Are such persons prone to have asthma, or other allergic manifestations?

T. E. Finegan, M.D., Elyria, Ohio.

ANSWER.—Sneezing on looking at bright light is probably produced by a reflex through the autonomic nervous system, much like coughing elicited by irritating the external auditory canal. This is to some extent a normal phenomenon. Those with nasal irritation or an acute infectious rhinitis are more likely to be affected by light stimulation or by other nonspecific stimuli such as dust and chemical fumes. If a person is affected by light in the manner described there is a fair possibility that he already has a nasal allergy. Anyone who has allergic rhinitis is likely to have asthma later.

DFP IN GLAUCOMA

To the Editor:—In The Journal, Oct. 23, 1948, page 625, response to a question regarding the efficacy of DFP in glaucoma contained this statement, "In general, when other miotics, as pilocarpine or physostigmine, fail to control the tension, DFP has little chance of success."

I should like to summarize for you data that have been obtained by various ophthalmologists in this country who have attempted to evaluate the usefulness of DFP in glaucoma. First of all, to the best of my knowledge, DFP is effective in lowering the intraocular tension in practically all cases in which other miotics are effective. In addition to that, it has been shown repeatedly that intraocular tension may be lowered by DFP when all other miotics or combinations of miotics have failed. In McDonald's series, 57.4 per cent of glaucomatic eyes resistant to other miotics were controlled by DFP; Dunphy reported 35 per cent; von Sallmann 63.1 per cent; Marr 15.6 per cent, and Leopold and McDonald 25 per cent response in eyes resistant to other miotic therapy. The statement, therefore, that DFP has little chance of success when other miotics fail to control the tension seems to me to be unwarranted, and correction should be made in the columns of your journal. I know of only one large ophthalmology clinic in this country that shares the opinion expressed in your answer. A valuable drug should not be dismissed on the basis of this one opinion.

J. H. Comroe Jr., M.D., Philadelphia.